PROPOSED LIDL FOOD STORE

BLACKMOORFOOT ROAD, HUDDERSFIELD

EXTERNAL LIGHTING IMPACT ASSESSMENT

Client:

Lidl Great Britain Ltd

Issue/Revision	00	01	02	03
Remarks	Issue for Planning Approval	Issue for Planning Approval – New site plan		
Date	25/06/2025	02/10/2025		
Prepared By	N. Ahmed	N. Ahmed		
Checked By	Stephen Ogden	Stephen Ogden		
Authorised By	Stephen Ogden	Stephen Ogden		
Project Number	25-4821	25-4821		
File Location	Dave Dickinson & Associates\Regions - Documents\DON\Blackmoorfoot 25-4821\K Reports\External Lighting Assessment			

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1.00 INTRODUCTION

This document has been prepared to summarise the design philosophy for the external lighting proposal, which will be incorporated at the proposed development at Blackmoorfoot Road, Huddersfield.

The proposed development has been developed to include the following principles:

- Common designs, materials, and branding for all Lidl stores
- Energy efficient with reduced carbon emissions
- Use of sustainable materials
- Repeatable design, simpler and cheaper to construct and operate
- Customer friendly
- Colleague friendly
- Disabled friendly

This document will aim to demonstrate how the external lighting design has been prepared, comprising of the following elements and key design principles, whilst minimising the impact on local adjoining properties:

- Amenity lighting

Amenity lighting has been provided around the site at key locations to enable the safe transit of pedestrian and vehicular traffic where required.

This document should be read in conjunction with the external lighting plan produced by signify (Drawing no. D-6313871_Lidl_ Blackmoorfoot Road, Huddersfield _R3).

2.00 SITE LOCATION

The site is located at Blackmoorfoot Road, Huddersfield at an approximate grid of 53.63600, -1.81164, as illustrated in Figure 1. The site currently is an open field, surrounded by residential development.

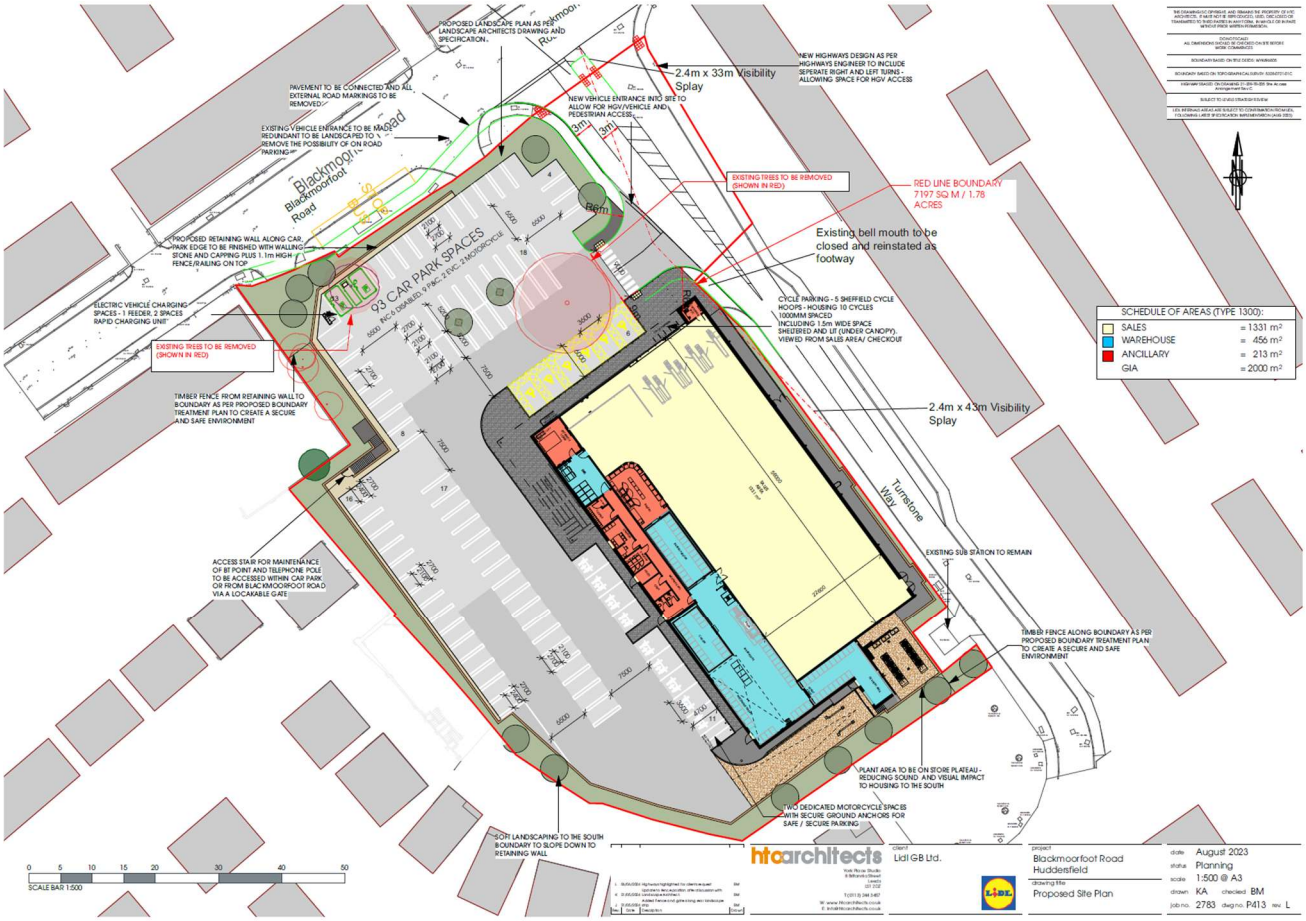


Fig 1. Proposed development site at Blackmoorfoot Road, Huddersfield

3.00 DESIGN CONSIDERATIONS

3.01 NATIONAL PLANNING POLICYFRAMEWORK (NPPF)

The NPPF was revised and published on the 12th of December 2024 and sets out the government's planning policies for England and how these are expected to be applied.

The NPPF includes a reference to the need to consider the effects of artificial lighting in Section 15 – Paragraph 198.

'15. Conserving and enhancing the natural environment'

198. Planning policies and decisions should also ensure that new development is appropriate for its location considering the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

3.02 STANDARDS & GUIDANCE

Several documents lay down the best practice and guidance on providing sufficient and appropriate lighting. The external lighting scheme is provided in accordance with the following:

- BS5489-1 (2020). Design of road lighting. Part 1: Lighting of roads and public amenity areas [Code of Practice
- BS EN 12464-2:(2024). Light and lighting - Lighting of workplaces. Part 2: Outdoor workplaces
- CIBSE Lighting Guide 6. The exterior environment
- Lidl BBS 2023 Rev B Electrical Services Corporate Specification.
- Institute of Lighting Professionals (ILP) Guidance Note 1 for the reduction of obtrusive Light (2021).
- Institute of Lighting Professionals (ILP) Guidance Note 8 Bats and Artificial Lighting (2023).
- BS5266-1:2016 Emergency lighting – Part 1: Code of practice for the emergency lighting of premises.

4.00 ECOLOGICAL SURVEY REPORT

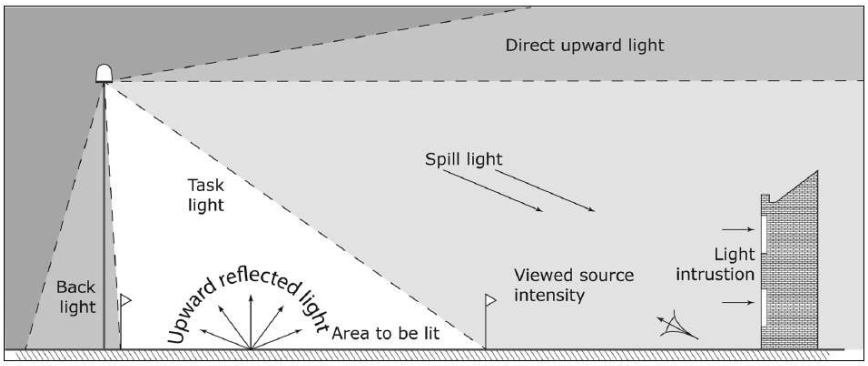
N/A

5.00 EXTERNAL LIGHTING MITIGATION MEASURES

The following mitigation measures should be taken to reduce light pollution around the site:

- Utilising lower wattage and more energy-efficient LED luminaires.
- Minimise light spill along the boundaries of the site.
- Minimise the spread of light, particularly along the site boundary (Turnstone way) to the residential area. The spread of light should be kept near to or below the horizontal. Flat cut-off lanterns are best.
- Reducing mounting heights where feasible.
- Eliminate any upward pointing light fitting.
- Accessories such as baffles, hoods and shields can be used to reduce the light spill and directing light where it is needed.
- Localising luminaire light distribution optics.
- All external lighting shall be controlled by a daylight sensor, time switch and contractors. The time switch and contactors shall be configured to prevent operation during daylight hours.
- Selecting luminaires with no direct upward light (0% ULR).

- Careful consideration and placement of luminaires to avoid spillage into surrounding areas in accordance with ILE Guidance Note for Environmental Zone.



Types of obtrusive light

5.01 ENVIRONMENTAL ZONE

The ILP Guidance Note 1 for the reduction of obtrusive Light 2021 also describes 5 Environmental Zones according to their distinctive lighting environment:

Table 2: Environmental zones

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Due to the location and characteristics of the site, it is considered appropriate for the external lighting scheme to meet the limitations of an **Environmental Zone E4**.

5.02 LIGHT INTRUSION ON SURROUNDING PREMISES

A traditional lux contour plan represents the illuminance at ground level, but this is not sufficient to demonstrate light intrusion on premises. The correct assessment method is the calculation of the vertical illuminance on the building or land.

Due to the location and characteristics of the site, it is considered appropriate for the external lighting scheme to meet the criteria of an **Environmental Zone E4** as per table 3 below.

Table 3 (CIE 150 table 2): Maximum values of vertical illuminance on premises

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

* If the installation is for public (road) lighting then this may be up to 1 lx.

5.03 **Direct Skyglow (ULR)**

Luminaires have been selected that have no ULR. These have been strategically placed such that the design solution meets the criteria of **Environmental Zone E4**.

Table 6 (CIE 150 table 5): Maximum values of upward light ratio (ULR) of luminaires

Light technical parameter	Environmental zones				
	E0	E1	E2	E3	E4
Upward light ratio (ULR) / %	0	0	2.5	5	15

The lighting proposals section of this report details the luminaire selections and specifications to achieve the guidance requirements. The lighting plan within Appendix A details the results of the design and demonstrate compliance with ILP Guidance Note 1 2021.

6.00 BATS AND LIGHTING

Due to the decline in bat numbers over the last century, the important part bats play as indicator species in the environment, and the importance of specific roost requirements in their life cycle, all species of bat and their roost sites (whether bats are present at the time or not) are fully protected under international and domestic legislation.

This makes it illegal to kill, injure, capture, or cause disturbance that affects populations of bats, obstruct access to bat roosts, or damage or destroy bat roosts. Individual bats are protected from 'intentional' or 'reckless' disturbance under the Wildlife and Countryside Act 1981 (as amended).

Recent monitoring shows a slow recovery for many bat species, due to conservation efforts and their legal protection. However, a few ecological traits make them extremely vulnerable, such as their lifecycle and how difficult it can be to detect their roosts.

The ILP Guidance Note 8: Bats and Artificial Lighting at Night 2023, provides a process for considering the impact on bats as part of a lighting scheme or new development incorporating night-time lighting.

It contains a toolkit of techniques which can be used on any site, whether a small domestic project or larger mixed-use, commercial or infrastructure development. It also provides best practice advice for the design of a lighting scheme, for both lighting professionals and other users who may be less familiar with the terminology and theory.

7.00 LIGHTING PROPOSAL

The external lighting scheme detailed in this document has been developed to provide a safe environment for customers and staff whilst reducing lighting spill into neighbouring areas.
The design and layout of the car park lighting system will comply with 'Dark Skies' criteria limiting upward lighting component.
Luminaire selections have been made in accordance with ILP guidance notes for **Environmental Zone E4**, taking account of neighbouring areas.
The LED luminaires emit a warm white light which is considered to have less impact on nocturnal species and habitats without a risk of providing a secure environment and satisfying requirements for CCTV operators.
The average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit watt.
All areas of external lighting will be automatically time and photocell controlled via the store building management system (BMS) to prevent operation during daylight hours and suitably zoned to conserve energy use. The car park lighting will be operational during store operational times Monday to Saturday 08:00 AM to 11:00 PM and Sunday 10:00 AM to 04:00 PM.
Additional sensors with presence and light detection are provided in the loading bay, rear walkways and external plant area so the lighting is activated only when activity occurs in these zones.
Average lighting levels in the car park are below the higher level allowed for car parking areas and are set as close to 15 lux average with 25% uniformity as possible.
The light spill beyond the site boundary is controlled by the careful selection and placement of luminaires.

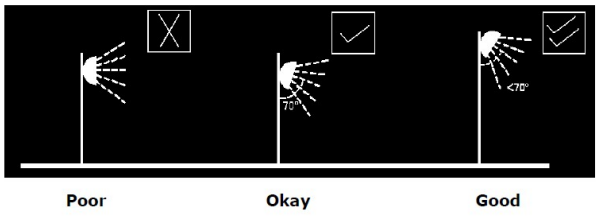
7.01 PHILIPS – UNISTREET GEN 2 (CAR PARK)

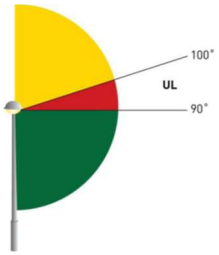
The lighting design incorporates the use of Philips UniStreet Gen2 lanterns with high-efficiency optics, specifically forward throw and asymmetric, to control the spill light around the site boundary to the best possible limitation, whilst achieving the required illumination levels within the site boundary.

Lighting columns are as short as is possible to be both economically sensible and to provide the appropriate lighting levels since the light at a low height reduces the ecological impact.

All lanterns are installed horizontally on 6m columns with a 5° tilt and aim towards the inside of the site.

The UniStreet luminaire, having a ULR of 0% eliminates the upward spread of light near to and above the horizontal. The most sensitive/critical zones for minimising sky glow are those between 90 and 100 degrees as shown below and referred to as the lower, upward lighting zone (UL).





Product data sheet (Luminaire datasheet with no light shield installed)

<u>UniStreet Gen2 (Single) (6m Column)</u>

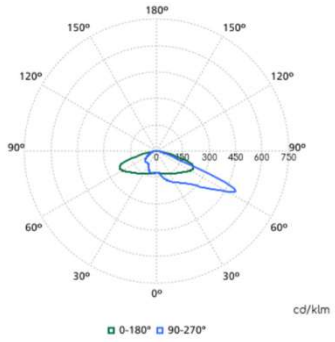
Input voltage = 220 – 240V
Wattage = 35.4W
Initial LED luminaire efficacy (system) = 138 lm/W
LOR = 0.83
Light source colour – Warm white 3000K
Initial luminous flux = 4900 lm

<u>UniStreet Gen2 (Twin) (6m Column)</u>

Input voltage = 220 – 240V
Wattage = 35.4W
Initial LED luminaire efficacy (system) = 138 lm/W
LOR = 0.83
Light source colour – Warm white 3000K
Initial luminous flux = 4900 lm

<u>UniStreet Gen2 (Single) (8m Column)</u>

Input voltage = 220 – 240V
Wattage = 51.8W
Initial LED luminaire efficacy (system) = 146.19 lm/W
LOR = 0.83
Light source colour – Warm white 3000K
Initial luminous flux = 7500 lm



7.02 PHILIPS – PACIFIC GEN 5 (LOADING BAY & REAR WALKWAY)

The building mounted lighting comprises Philips Pacific Gen 5 LED luminaires, which are fixed to the building at 3.25m from finished floor level and will provide general and emergency lighting. The luminaires will be tilted down at 5 degrees as standard to achieve the desired illumination requirement.

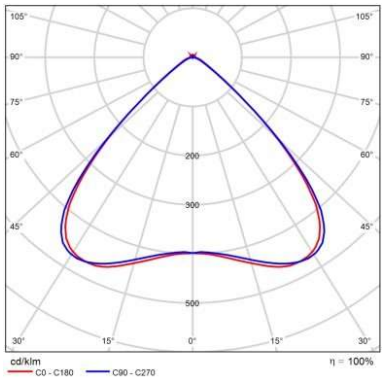
Product data sheet

PACIFIC GEN 5

Input voltage = 220 – 240V
Wattage = 25.5W
Initial LED luminaire efficacy (system) = 152 lm/W
LOR = 1
Light source colour – Warm white 3000K
Initial luminous flux = 3900 lm

PACIFIC GEN 5 (Emergency version)

Input voltage = 220 – 240V
Wattage = 25.50W
Initial LED luminaire efficacy (system) = 152 lm/W
LOR = 1
Light source colour – Warm white 3000K
Initial luminous flux = 3900 lm
Charging power = 4.5W
Emergency Lighting Flux = 360 lm



7.03 PHILIPS – GREENSPACE (CANOPY & TROLLEY BAY)

Due to the higher perception of detail required in this area, the lighting under the store canopy is provided by Philips GreenSpace ceiling-recessed downlighters to achieve 150lx average illumination at 1m from the ground with 0.5 uniformity (U_o).

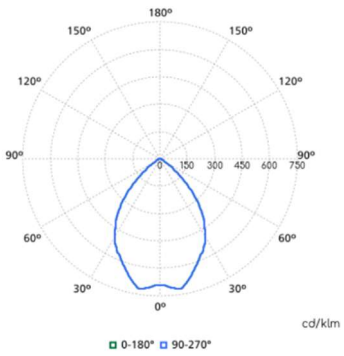
The canopy lighting is operational in line with the car park hours 07.30 AM to 11.00 PM.

Product data sheet
GREEN SPACE

Input voltage = 220 – 240V
Wattage = 33.5W
Initial LED luminaire efficacy (system) = 67.4 lm/W
LOR = 1
Light source colour – Neutral white 4000K
Initial luminous flux = 2260 lm

GREEN SPACE (Emergency version)

Input voltage = 220 – 240V
Wattage = 33.5W
Initial LED luminaire efficacy (system) = 67.4 lm/W
LOR = 1
Light source colour – Warm white 3000K
Initial luminous flux = 2260 lm
Charging power = 4.5W
Emergency Lighting Flux = 383 lm



8.00 SENSITIVE LIGHTING

The lighting scheme is designed to reduce the light spill without compromising the primary objective of providing safe pedestrian and vehicle circulation. This done by taking the following steps:

1. The column-mounted lanterns with forward light throw and tilted 5° towards the car park.
2. The wall mounted luminaires to the rear of the store will operate during emergencies ONLY as part of fire escape. The lighting will be turned "OFF" during normal operating conditions as shown below in figure 2.
3. The wall mounted luminaires to loading bay & external plantroom are controlled via PIRs/Lux sensor and will be turned "OFF" in normal operating conditions as shown below in figure 2.
4. All column mounted and wall mounted luminaries installed with LED warm-white 3000K optics.

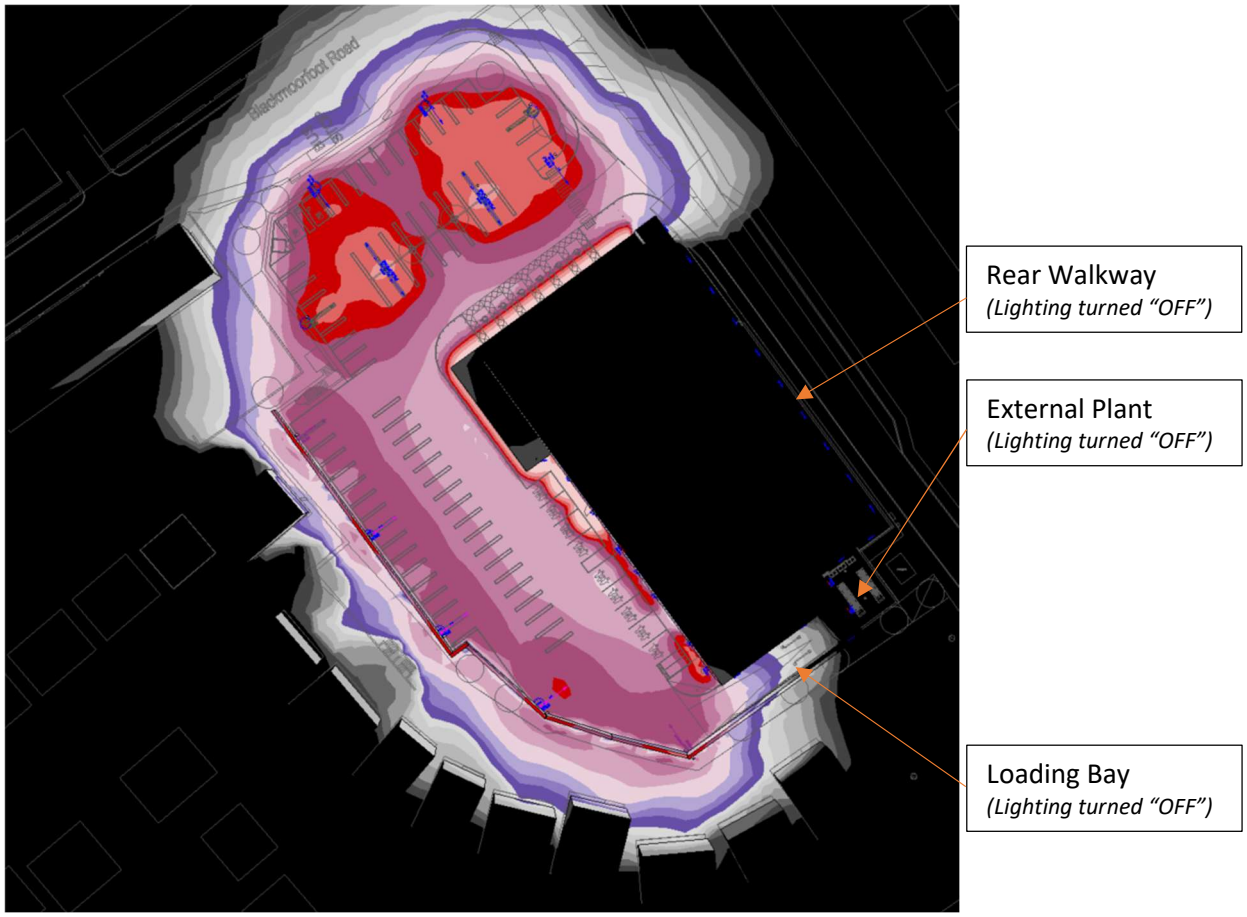


Fig 2. Building mounted luminaries to Rear store, Plant & Delivery area – **Switched OFF**

9.00 SENSITIVE LIGHTING TO THE RESIDENTIAL AREA

A vertical plane directly placed on the façade of the residential buildings has been modelled in the lighting software to demonstrate compliance. Calculation results shown on Fig. 3a & 3b demonstrate that the lighting spill onto residential buildings opposite and adjacent car park is minimal and within limited values for **Environmental zone E4**. Each of modelled residential property have been placed vertically with a measuring surface in 3 x 8m size and more at around 1m high mimicking house windows where the lighting spillage can protrude through. Each of these properties have a similar output result oscillating between 0.1 – 0.75 lux maximum noted on each vertical plane. These values are much lower than post curfew limited value of 5 lux for **Environmental zone E4** and therefore in compliance with the ILP Guide 01/21.

Also, it is found that the houses surrounding the site are situated at a higher elevation, which should further decrease the overall light spill.

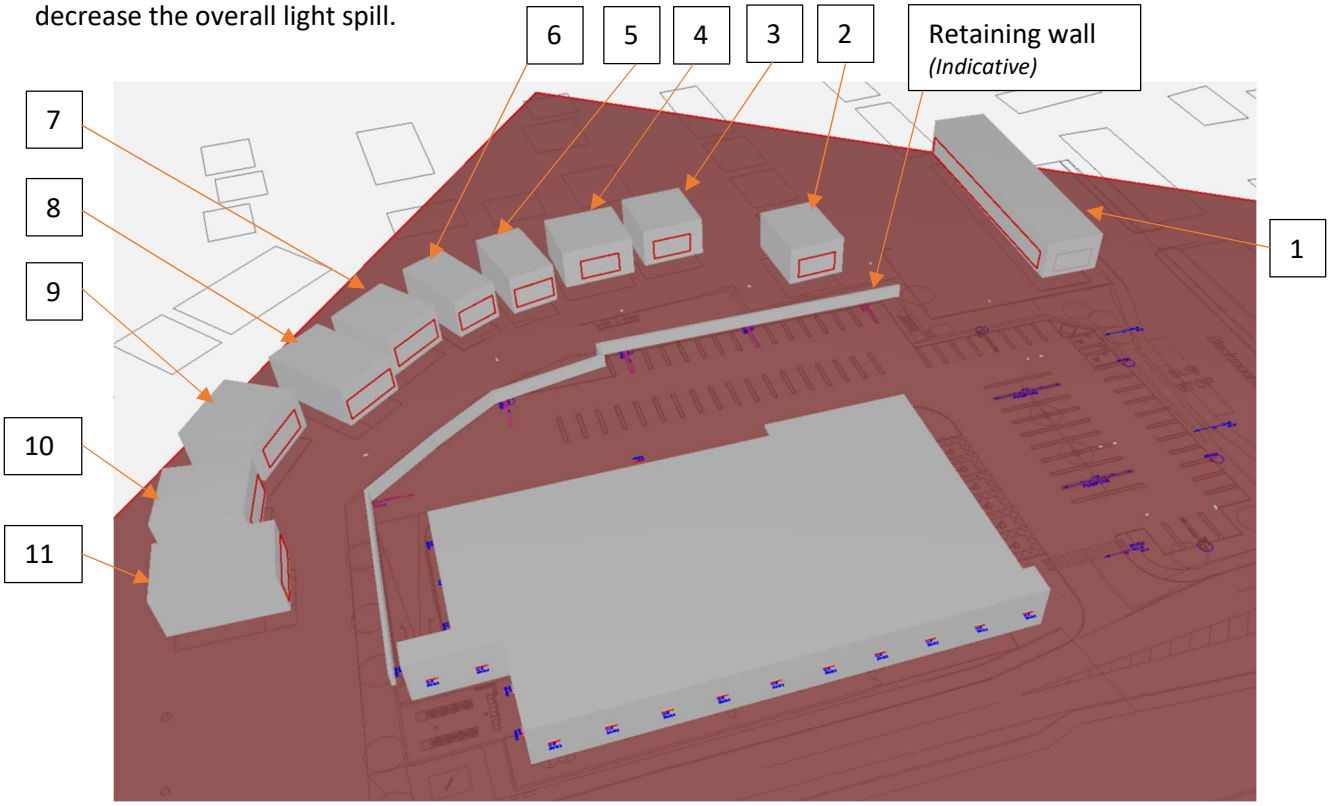


Fig 3a. Residential Area – Visible vertical planes on Residential Properties 1-11

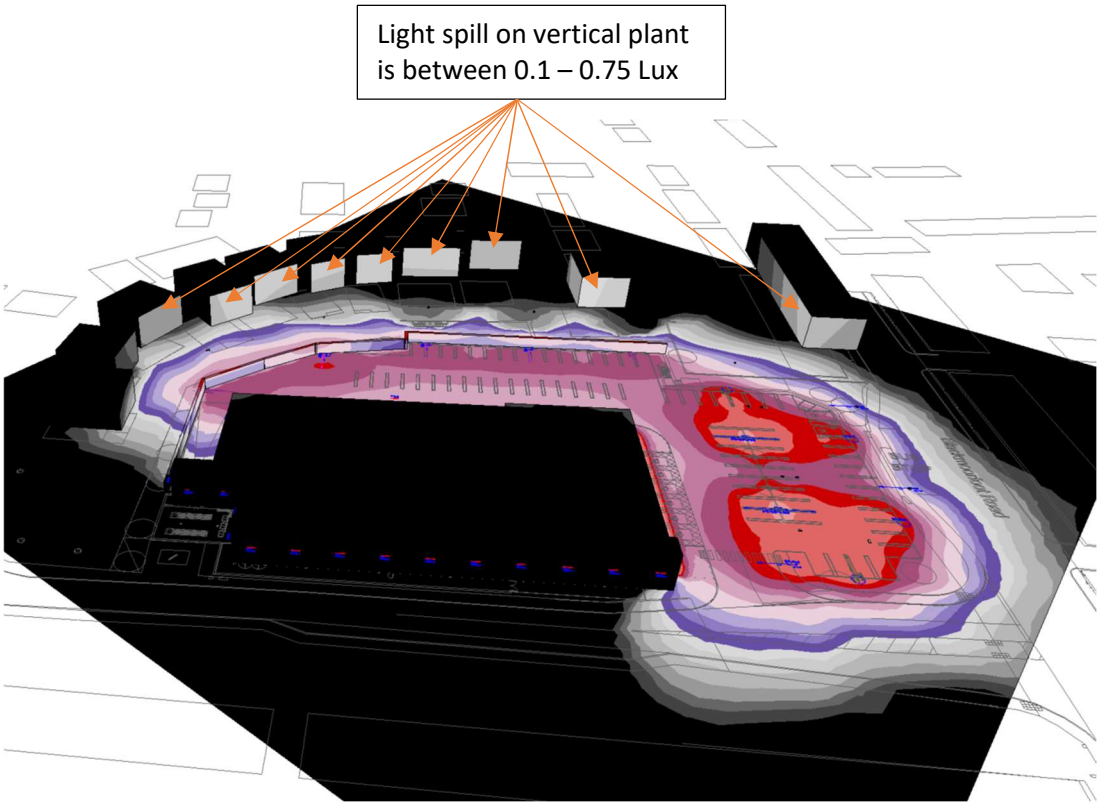


Fig 3b. Residential Area – False colour rendering - Residential Properties 1-11

10.00 CONCLUSION

The lighting assessment carried out for the site at Blackmoorfoot Road, Huddersfield indicates that overall light pollution levels will not be significantly influenced by the proposed development. It is proposed that the lighting impact on surrounded area can be minimised by using following methods such as lighting control, limiting illuminance and controlling light spill using baffles, hoods and shield etc.

In summary it is our considered opinion that the proposed development will not have any significant negative impact on the immediate environment with respect to lighting pollution.

The external lighting design for the proposed development clearly shows Lidl's commitment to delivering high quality engineered projects, that are sustainable and energy efficient.

All systems will be designed in compliance with ILP guidelines, relevant BS EN's, CIBSE guidelines and Part L of the Building Regulations.

11.00 REFERENCES

Bat Conservation Trust (2011) - Statement on the impact and design of artificial light on bats

Bat Conservation Trust (2018). Bats and Artificial Lighting in the UK

BSEN 12464-2:2024 Lighting of workplaces - Outdoor workplaces

BS5266-1:2016 Emergency lighting – Part 1: Code of practice for the emergency lighting of premises

BS5489-1:2020 Design of road lighting - Part 1: Lighting of roads and public amenity areas

CIBSE Lighting Guide 6 - The exterior environment.

Institute of Lighting Professionals (ILP) Guidance Note 1 (GN01/21) - The reduction of obtrusive Light

Institute of Lighting Professionals (ILP) Guidance Note 8 (GN08/23) - Bats and Artificial Lighting at Night

Lidl BBS 2023 Rev B - Electrical Services Corporate Specification.

APPENDIX A: PROPOSED EXTERNAL LIGHTING LAYOUT BY SIGNIFY

D-6313871_Lidl_ Blackmoorfoot Road, Huddersfield _R3

APPENDIX B: EXTERNAL LIGHTING CALCULATIONS BY SIGNIFY

See below

LiAS Design Notes

This preliminary design is produced by the Lighting Application Specialist (LiAS) team of Signify UK based on information supplied by the Customer for the purpose of identifying suitable products and costing the proposal. This design cannot be used for Construction, as this design does not purport to eliminate health and safety risks as a CDM Regulation risk assessment has not been undertaken.

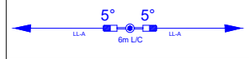
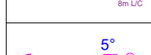
Depending on the level of information received, a number of assumptions may have been applied in order to create an indicative lighting proposal and costing model, according to lighting industry guidelines and incorporating industry best practice methods. These assumptions are documented below and will require confirmation by the Principal Designer (which is not Signify UK) during the detailed design phase.

Project Specific Design Comments:

- Where 'Lighting Classes' have not been provided/specified, the calculations have been produced using Lidl Specification lighting classes
- Where column heights have not been provided/specified, these have been assumed to be 6m.
- Where wall/ceiling mounting heights have not been provided/specified, these have been assumed to be 3.25m.
- It has been assumed that luminaires on columns will be mounted post-top or on 0.5m outreach brackets.
- It has been assumed that canopy luminaires will be ceiling mounted.
- It has been assumed that LL-E/LL-E EM luminaires will be wall mounted.
- Signify has not undertaken any emergency lighting calculations. Luminaires marked as emergency fittings are for indicative purposes only. It is the responsibility of the Principal Designer to ensure emergency lighting calculations are performed and that all emergency evacuation routes are lit to a suitable standard.

- Preliminary Design proposals produced by the Signify LiAS Team are not to be used for installation purposes. It is the responsibility of the Principal Designer and/or Principal Contractor to ensure all Installation and Maintenance can be done in a safe manner, carried out by competent persons, based on their agreed Risk Assessments and Method Statements.
- The Luminaire Maintenance Factors have been based on 6-year cleaning intervals within an E3/E4 Environmental Zone and it is assumed that lamp/luminaire failures will be replaced on a 'spot replacement'.
- Energy consumptions have been based on the luminaire/s having Constant Light Output (CLO) enabled and the quoted wattage/s are the average over 100,000 hours (without dimming).
- The design calculations produced by Signify do not account for the effect obstructions, such as trees, will cause.
- Signify has not been provided with utility plans showing Buried, Above Ground or Overhead utilities. Therefore, all column/luminaire locations are indicative and are subject to review/verification by the Principal Designer.
- Unless stated otherwise, Signify has not visited site. Therefore, all column/luminaire locations are indicative and are subject to an onsite verification arranged/performed by the Principal Designer.
- Signify has not produced any Private Cable Network electrical calculations or reviewed the DNO network to confirm power supplies to the proposed lighting.
- Signify has not performed any asset condition testing and therefore assumes that any existing lighting columns/wall mounted brackets are structurally capable of supporting the weight & windage of the proposed luminaire/s. This must be verified by the Principal Designer before installation works commence.
- Unless stated otherwise, Signify is not supplying the new lighting columns (including brackets etc) and therefore it is the responsibility of the Principal Designers to confirm that all proposed equipment is suitable for the intended locations (e.g. raise & lower, ground condition, foundation type, saline environment, etc).
- Unless stated otherwise, luminaires will be supplied in their standard colour.

Luminaire Schedule

Luminaire Schedule			
Symbol	Qtys Lanterns	Luminaire Type	Lumens
	4	**2 X LED Luminaires and 1 x 6 m Column with 0.5m bracket.** (Lantern Ref: LL-A 3000K)	4900
	3	**1 X LED Luminaire and 1 x 6 m Column with 0.5m bracket.** (Lantern Ref: LL-A 3000K)	4900
	2	**1 X LED Luminaire and 1 x 6 m Column with 0.5m bracket.** (Lantern Ref: LL-C 3000K)	7500
	2	**1 X LED Luminaire and 1 x 8 m Column with 0.5m bracket.** (Lantern Ref: LL-C BL2 3000K)	7500
	3	**1 X LED Luminaire and 1 x 8 m Column with 0.5m bracket.** (Lantern Ref: LL-C 3000K)	7500
	6	**1 X 1300mm LED Luminaire** Luminaire mounted at 3.25m. (Luminaire Ref: LL-E 3000K) with LiDL adjustable bracket.	3900
	19	**1 X 1300mm LED Luminaire** Luminaire mounted at 3.25m. (Luminaire Ref: LL-E EM-EL3 3000K) with LiDL adjustable bracket.	360
	17	**1 X Recessed Downlighter** (Luminaire Ref: LL-CANOPY)	2260
	1	**1 X Recessed Downlighter** (Luminaire Ref: LL-CANOPY EM-EL3)	
	7	**Suggested Lanterns with back plates.**	

All Lanterns installed at tilt angles indicated adjacent to the luminaire positions indicated on the drawing.
Where possible all columns should be placed 0.75m away from the curb line.
Perimeter lighting to be considered by client including any emergency lighting requirements.
Footpaths/Stairs/Ramps not considered in these proposals.
Where required Lighting columns should be protected by barriers from vehicle impact damages.
These lighting values do not take into account any obstructions from trees, vehicles, objects etc.

NOTE: “Signify has not undertaken any emergency lighting calculations. Luminaires marked as emergency fittings are for indicative purposes only. It is the responsibility of the Principle Designer to ensure emergency lighting calculations are performed and that all emergency evacuation routes are lit to a suitable standard.”

Calculation Summary based on maintenance factor of 0.79								
Label	Units	Avg	Min	Max	Min/Avg	Height	Grid Points	UWLR
Main Carpark	Lux	14.8	4.4	99.0	0.30	0m	1.5m	1%

Signify Contacts:

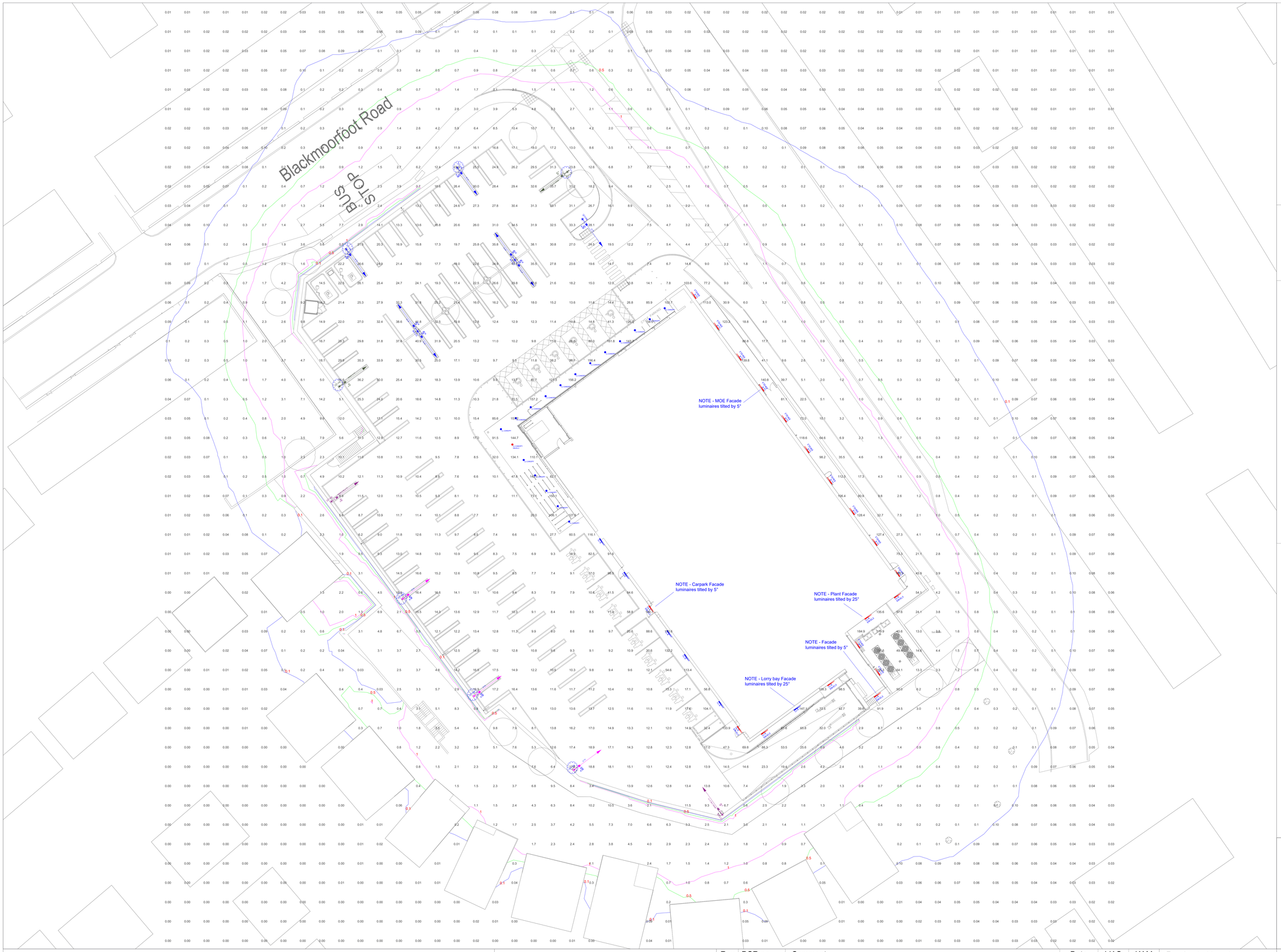
Key Account Manager, Name, Richard Fortune - 07787 004900, richard.fortune@signify.com

PROPOSAL
(NOT FOR CONSTRUCTION)

Rev	DSR no.	Comment	Date	LiAS	KAM
0	D-6208117	INITIAL PROPOSAL	14/05/25	HSR	RF
1	D-6257163	NEW SITE PLAN DRAWING	02/06/25	HSR	RF
2	D-6257163	LIGHTING PROPOSAL REVISED FOR SPILL LIGHT	24/06/25	HSR	RF
3	D-6313871	NEW SITE PLAN DRAWING	03/07/25	HSR	RF

Project Number: 502377667
Scale & Sheet Size: NTS @ A3
Sheet No: DWG 00

Project Name: LiDL BLACKMOORFOOT ROAD HUDDERSFIELD
Drawing Name: LiAS DESIGN NOTES & LUMINAIRE SCHEDULE



Luminaire Schedule

Symbol	Qtys	Luminaire	Type	Lumens
	4	LL-A 3000K	**2 X LED Luminaires and 1 x 6 m Column with 0.5m bracket.** (Lantern Ref: LL-A 3000K)	4900
	3	LL-A 3000K	**1 X LED Luminaire and 1 x 6 m Column with 0.5m bracket.** (Lantern Ref: LL-A 3000K)	4900
	2	LL-C BL2 3000K	**1 X LED Luminaire and 1 x 8 m Column with 0.5m bracket.** (Lantern Ref: LL-C BL2 3000K)	7500
	2	LL-C BL2 3000K	**1 X LED Luminaire and 1 x 8 m Column with 0.5m bracket.** (Lantern Ref: LL-C BL2 3000K)	7500
	3	LL-C 3000K	**1 X LED Luminaire and 1 x 8 m Column with 0.5m bracket.** (Lantern Ref: LL-C 3000K)	7500
	6		**1 X 1300mm LED Luminaire** Luminaire mounted at 3.25m. (Luminaire Ref: LL-E 3000K with LiDL adjustable bracket.	3900
	19	EM-EL3	**1 X 1300mm LED Luminaire** Luminaire mounted at 3.25m. (Luminaire Ref: LL-E EM-EL3 3000K) with LiDL adjustable bracket.	360
	17	LL-CANOPY	**1 X Recessed Downlighter** (Luminaire Ref: LL-CANOPY)	2260
	1	LL-CANOPY EM-EL3	**1 X Recessed Downlighter** (Luminaire Ref: LL-CANOPY EM-EL3)	
	7		**Suggested Lanterns with back plates.**	

All Lanterns installed at tilt angles indicated adjacent to the luminaire positions indicated on the drawing.
Where possible all columns should be placed 0.75m away from the curb line.
Footpaths/Cycle Tracks not considered in these proposals as emergency lighting requirements.
Footpaths/Ramps/Ramps not considered in these proposals.
Where required Lighting columns should be protected by barriers from vehicle impact damages.
These lighting values do not take into account any obstructions from trees, vehicles, objects etc.

NOTE: "Signify has not undertaken any emergency lighting calculations. Luminaires marked as emergency fittings are for indicative purposes only. It is the responsibility of the Principle Designer to ensure emergency lighting calculations are performed and that all emergency evacuation routes are lit to a suitable standard."

Calculation Summary based on maintenance factor of 0.79

Label	Units	Avg	Min	Max	Min/Avg	Height	Grid Points	UWLR
Main Carpark	Lux	14.8	4.4	99.0	0.30	0m	1.5m	1%

Horizontal Spill Light - Maintenance Factor 1

Spill light Isoline Legend

- 0.1lx
- 0.5lx
- 1.0lx

Signify

PHILIPS interact PHILIPS hue personal wireless lighting

LIGHT COLORKINETICS

Notes:

1) Unless agreed otherwise, the lighting proposal produced by the Lighting Application Specialist (LiAS) team of Philips Lighting UK&I is not intended for construction purposes, as it does not take into account the elimination of health and safety risks at this stage. For further details please refer to sheet number **DWG 00**

2) Do not scale for this drawing

PROPOSAL
(NOT FOR CONSTRUCTION)

Rev	DSR no.	Comment	Date	LiAS	KAM
0	D-6208117	INITIAL PROPOSAL	14/05/25	HSR	RF
1	D-6257163	NEW SITE PLAN DRAWING	02/06/25	HSR	RF
2	D-6257163	LIGHTING PROPOSAL REVISED FOR SPILL LIGHT	24/06/25	HSR	RF
3	D-6313871	NEW SITE PLAN DRAWING	03/07/25	HSR	RF

Project Number
502377667

Scale & Sheet Size
1:200 @ A0

Sheet No
DWG 01

Project Name
LiDL BLACKMOORFOOT ROAD HUDDERSFIELD

Drawing Name
PROPOSED LIGHTING LAYOUT

LiDL Blackmoorfoot Road Huddersfield

Installation : Carpark

Project number	:	
Customer	:	LiDL
Processed by	:	HSR
Date	:	03.07.2025

Project description:
Maintenance Factor 0.79

No obstructions are considered in these lighting calculations.

Lighting levels to 15 Lux Ave with 25% uniformity.

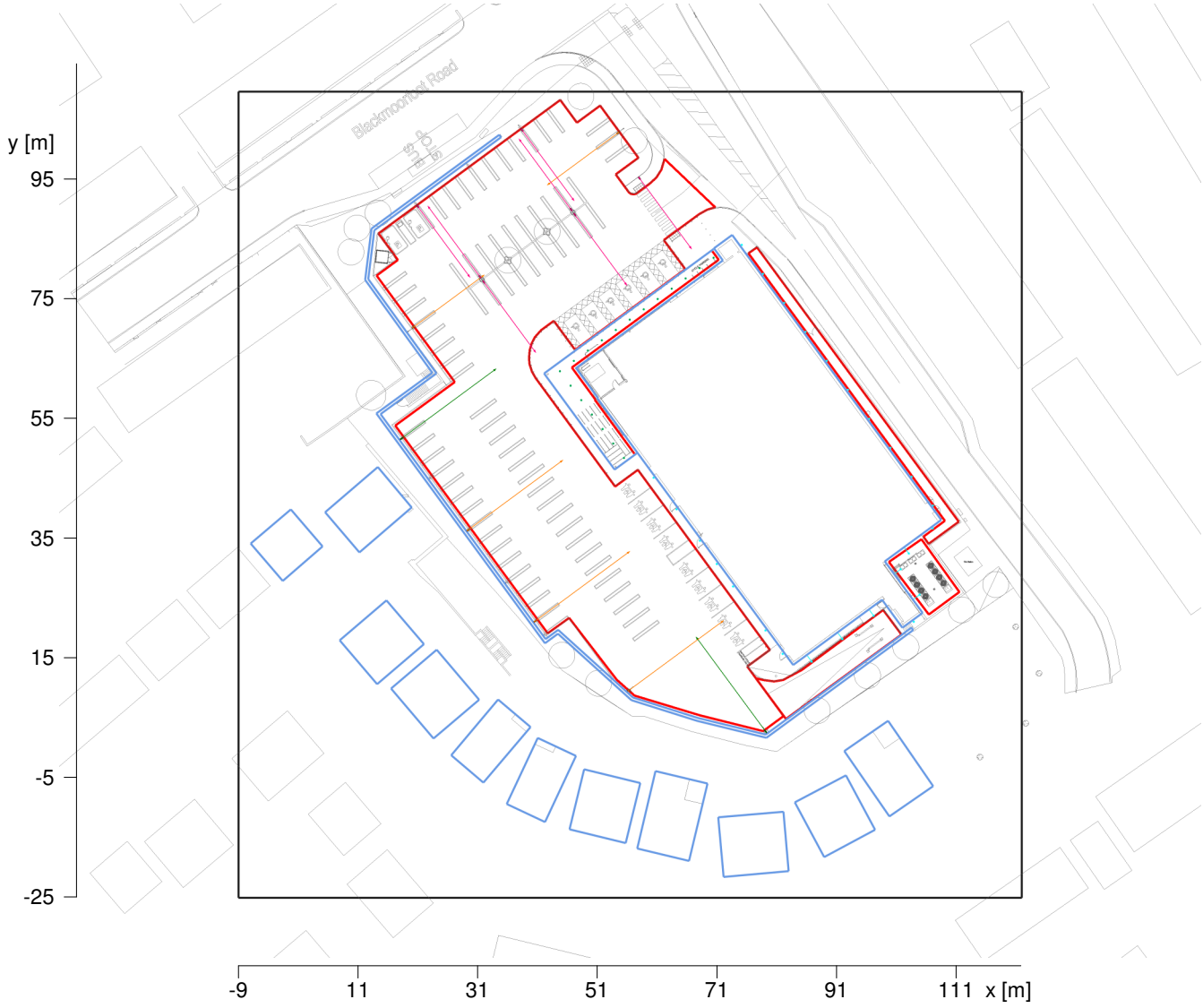
The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

Table of contents

1 Carpark

1.1 Description, Carpark

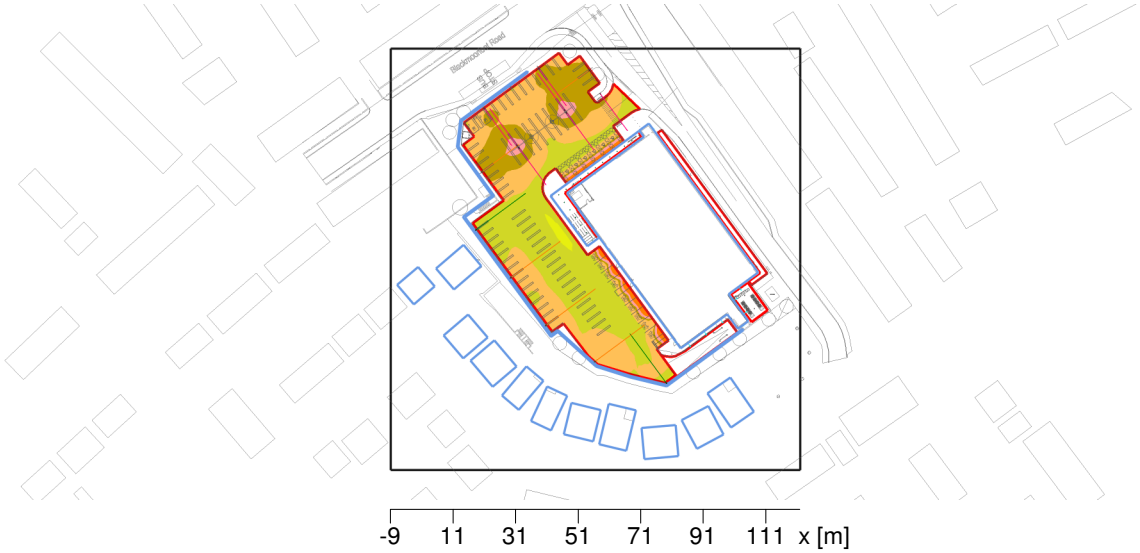
1.1.1 Floor plan

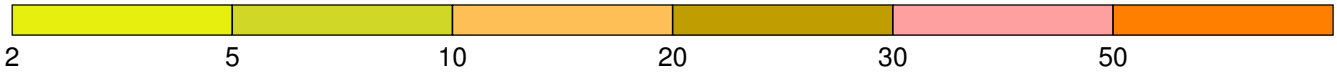


1 Carpark

1.2 Summary, Carpark

1.2.1 Result overview, Carpark





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.79
Total luminous flux	224980 lm
Total power	1850.9 W
Total power per area (17610.65 m²)	0.11 W/m²
Upward light ratio (RUL)	1 %

Illuminance

Average illuminance	$\bar{E}_m$	14.8 lx
Minimum illuminance	E_{min}	4.4 lx
Maximum illuminance	E_{max}	99 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:3.35 (0.3)
Diversity U_d	E_{min}/E_{max}	1:22.4 (0.04)

Type No.\Make

		Philips Lighting	
2	18 x	Order No.	: !
		Luminaire name	: LL-Canopy
		Equipment	: 1 x DLED-4000 33.5 W / 2260 lm

The ULR value has been calculated without obstruction by other objects.

1 Carpark

1.2 Summary, Carpark

1.2.1 Result overview, Carpark

PHILIPS/2025-01-06 Eulumdat/1 B-Tilt = 0.00

7 5 x
Order No. :
Luminaire name : LL-C 3000K
Equipment : 1 x LED75-4S/830 51.8 W / 7500 lm

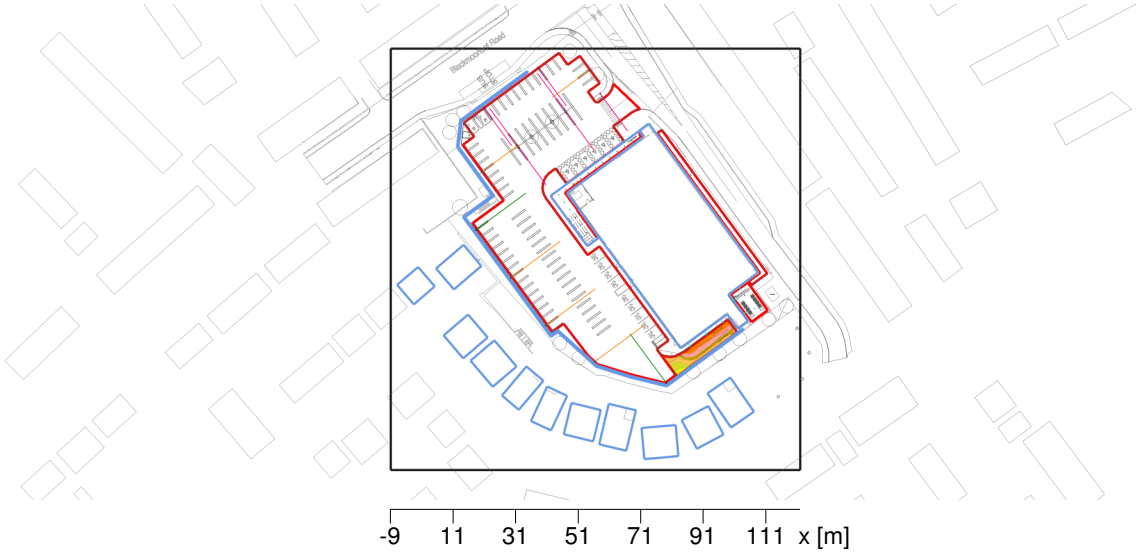
8 7 x
Order No. :
Luminaire name : LL-A 3000K
Equipment : 1 x LED49-4S/830 35.4 W / 4900 lm

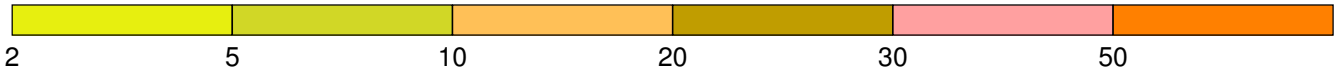
9 25 x
Order No. :
Luminaire name : LL-E 3000K
Equipment : 1 x LED42S/830 25.5 W / 3900 lm

10 2 x
Order No. :
Luminaire name : LL-C BL2 3000K
Equipment : 1 x LED75-4S/830 51.8 W / 7500 lm

1.2 Summary, Carpark

1.2.2 Result overview, Lorry Bay





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.79
Total luminous flux	224980 lm
Total power	1850.9 W
Total power per area (17610.65 m²)	0.11 W/m²
Upward light ratio (RUL)	1 %

Illuminance

Average illuminance	$\bar{E}_m$	32.2 lx
Minimum illuminance	E_{min}	3.6 lx
Maximum illuminance	E_{max}	72.2 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:8.83 (0.11)
Diversity U_d	E_{min}/E_{max}	1:19.8 (0.05)

Type No.\Make

		Philips Lighting	
2	18 x	Order No.	: !
		Luminaire name	: LL-Canopy
		Equipment	: 1 x DLED-4000 33.5 W / 2260 lm

The ULR value has been calculated without obstruction by other objects.

1.2 Summary, Carpark

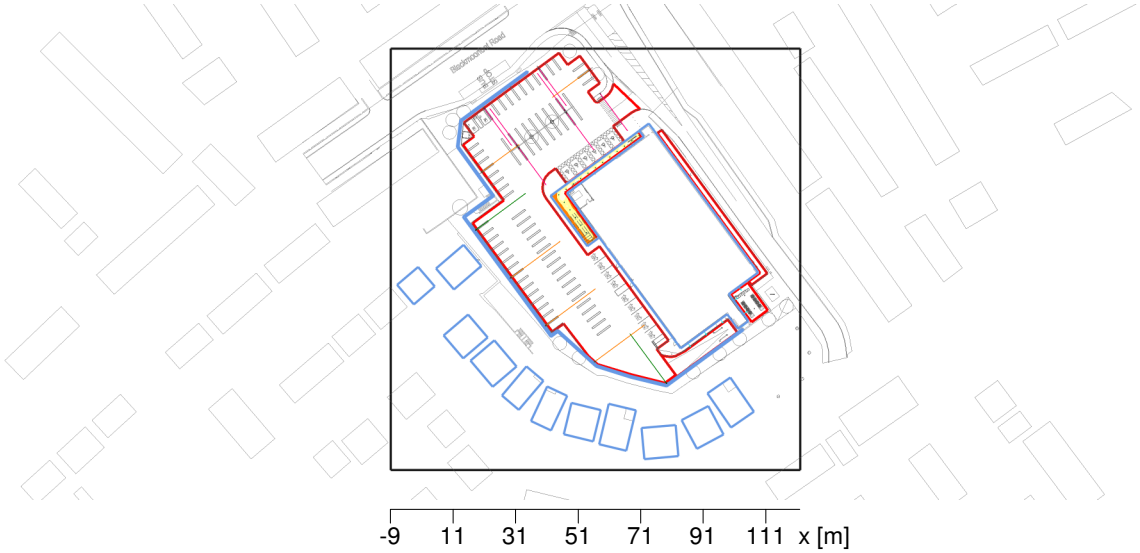
1.2.2 Result overview, Lorry Bay

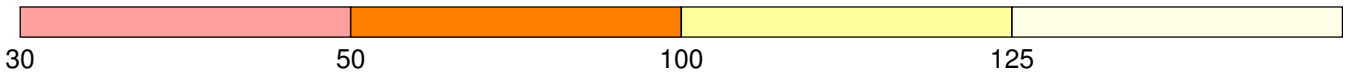
PHILIPS/2025-01-06 Eulumdat/1 B-Tilt = 0.00

7	5 x	Order No. :
		Luminaire name : LL-C 3000K
		Equipment : 1 x LED75-4S/830 51.8 W / 7500 lm
8	7 x	Order No. :
		Luminaire name : LL-A 3000K
		Equipment : 1 x LED49-4S/830 35.4 W / 4900 lm
9	25 x	Order No. :
		Luminaire name : LL-E 3000K
		Equipment : 1 x LED42S/830 25.5 W / 3900 lm
10	2 x	Order No. :
		Luminaire name : LL-C BL2 3000K
		Equipment : 1 x LED75-4S/830 51.8 W / 7500 lm

1.2 Summary, Carpark

1.2.3 Result overview, Canopy Area





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.79
Total luminous flux	224980 lm
Total power	1850.9 W
Total power per area (17610.65 m²)	0.11 W/m²
Upward light ratio (RUL)	1 %

Illuminance

Average illuminance	$\bar{E}_m$	108 lx
Minimum illuminance	E_{min}	42 lx
Maximum illuminance	E_{max}	144 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:2.6 (0.38)
Diversity U_d	E_{min}/E_{max}	1:3.46 (0.29)

Type No.\Make

		Philips Lighting	
2	18 x	Order No.	: !
		Luminaire name	: LL-Canopy
		Equipment	: 1 x DLED-4000 33.5 W / 2260 lm

The ULR value has been calculated without obstruction by other objects.

1.2 Summary, Carpark

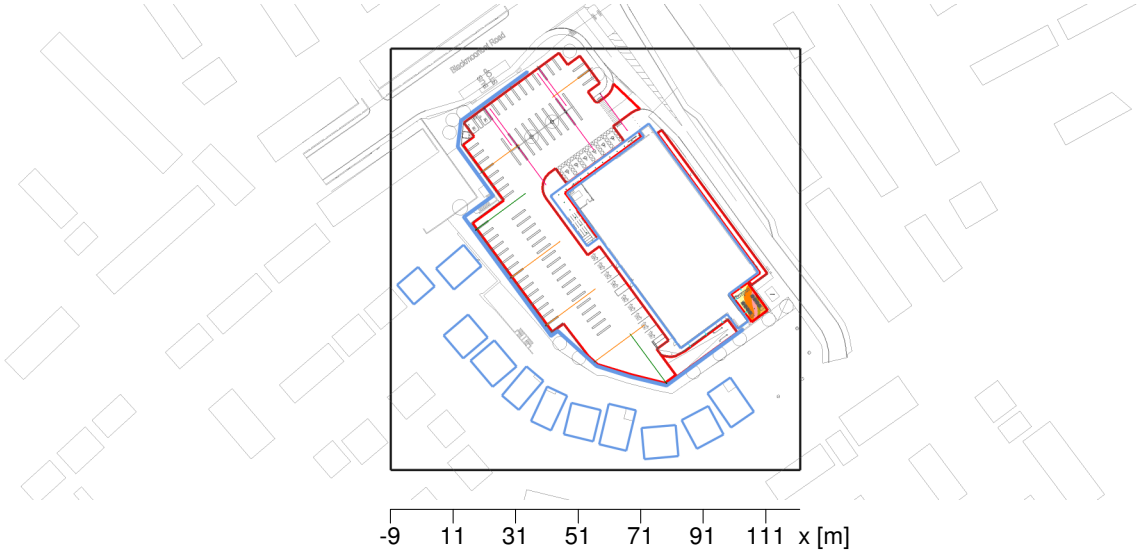
1.2.3 Result overview, Canopy Area

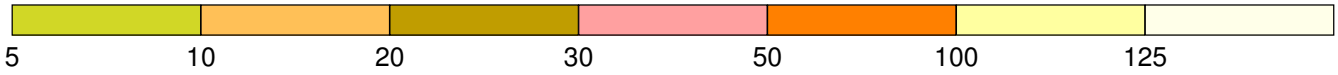
PHILIPS/2025-01-06 Eulumdat/1 B-Tilt = 0.00

7	5 x	Order No.	:
		Luminaire name	: LL-C 3000K
		Equipment	: 1 x LED75-4S/830 51.8 W / 7500 lm
8	7 x	Order No.	:
		Luminaire name	: LL-A 3000K
		Equipment	: 1 x LED49-4S/830 35.4 W / 4900 lm
9	25 x	Order No.	:
		Luminaire name	: LL-E 3000K
		Equipment	: 1 x LED42S/830 25.5 W / 3900 lm
10	2 x	Order No.	:
		Luminaire name	: LL-C BL2 3000K
		Equipment	: 1 x LED75-4S/830 51.8 W / 7500 lm

1.2 Summary, Carpark

1.2.4 Result overview, Plant





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.79
Total luminous flux	224980 lm
Total power	1850.9 W
Total power per area (17610.65 m²)	0.11 W/m²
Upward light ratio (RUL)	1 %

Illuminance

Average illuminance	$\bar{E}_m$	76 lx
Minimum illuminance	E_{min}	7 lx
Maximum illuminance	E_{max}	162 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:10.9 (0.09)
Diversity U_d	E_{min}/E_{max}	1:23.2 (0.04)

Type No.\Make

		Philips Lighting	
2	18 x	Order No.	: !
		Luminaire name	: LL-Canopy
		Equipment	: 1 x DLED-4000 33.5 W / 2260 lm

The ULR value has been calculated without obstruction by other objects.

1.2 Summary, Carpark

1.2.4 Result overview, Plant

PHILIPS/2025-01-06 Eulumdat/1 B-Tilt = 0.00

7 5 x
Order No. :
Luminaire name : LL-C 3000K
Equipment : 1 x LED75-4S/830 51.8 W / 7500 lm

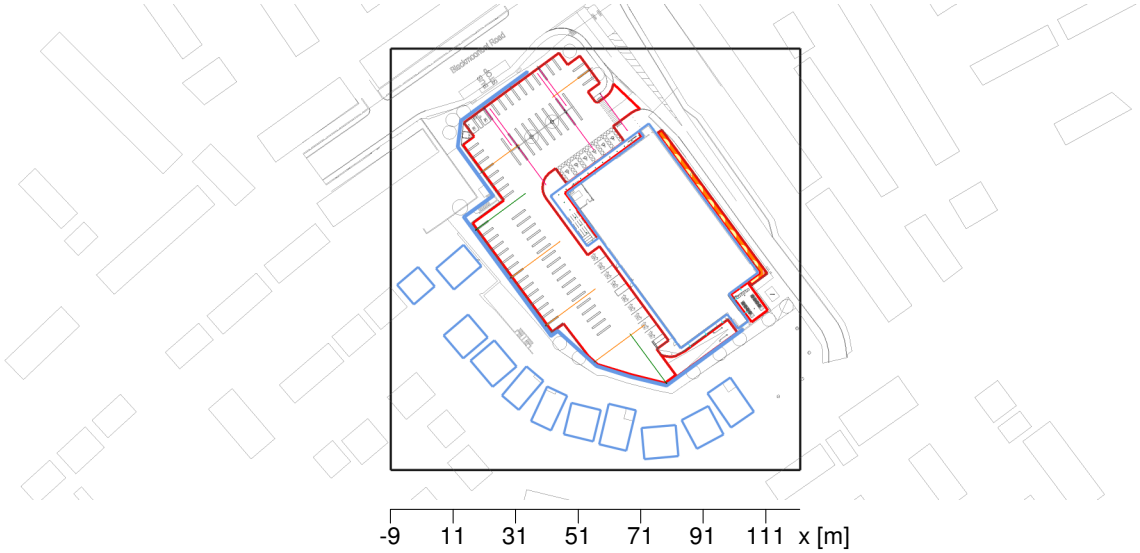
8 7 x
Order No. :
Luminaire name : LL-A 3000K
Equipment : 1 x LED49-4S/830 35.4 W / 4900 lm

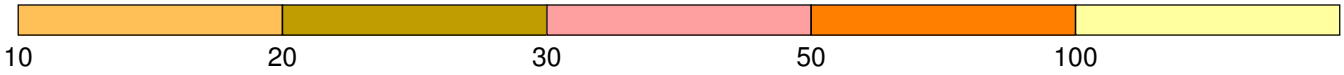
9 25 x
Order No. :
Luminaire name : LL-E 3000K
Equipment : 1 x LED42S/830 25.5 W / 3900 lm

10 2 x
Order No. :
Luminaire name : LL-C BL2 3000K
Equipment : 1 x LED75-4S/830 51.8 W / 7500 lm

1.2 Summary, Carpark

1.2.5 Result overview, MoE Footpath





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.79
Total luminous flux	224980 lm
Total power	1850.9 W
Total power per area (17610.65 m²)	0.11 W/m²
Upward light ratio (RUL)	1 %

Illuminance

Average illuminance	$\bar{E}_m$	89 lx
Minimum illuminance	E_{min}	15 lx
Maximum illuminance	E_{max}	120 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:5.89 (0.17)
Diversity U_d	E_{min}/E_{max}	1:7.98 (0.13)

Type No.\Make

		Philips Lighting	
2	18 x	Order No.	: !
		Luminaire name	: LL-Canopy
		Equipment	: 1 x DLED-4000 33.5 W / 2260 lm

The ULR value has been calculated without obstruction by other objects.

1.2 Summary, Carpark

1.2.5 Result overview, MoE Footpath

PHILIPS/2025-01-06 Eulumdat/1 B-Tilt = 0.00

7 5 x
Order No. :
Luminaire name : LL-C 3000K
Equipment : 1 x LED75-4S/830 51.8 W / 7500 lm

8 7 x
Order No. :
Luminaire name : LL-A 3000K
Equipment : 1 x LED49-4S/830 35.4 W / 4900 lm

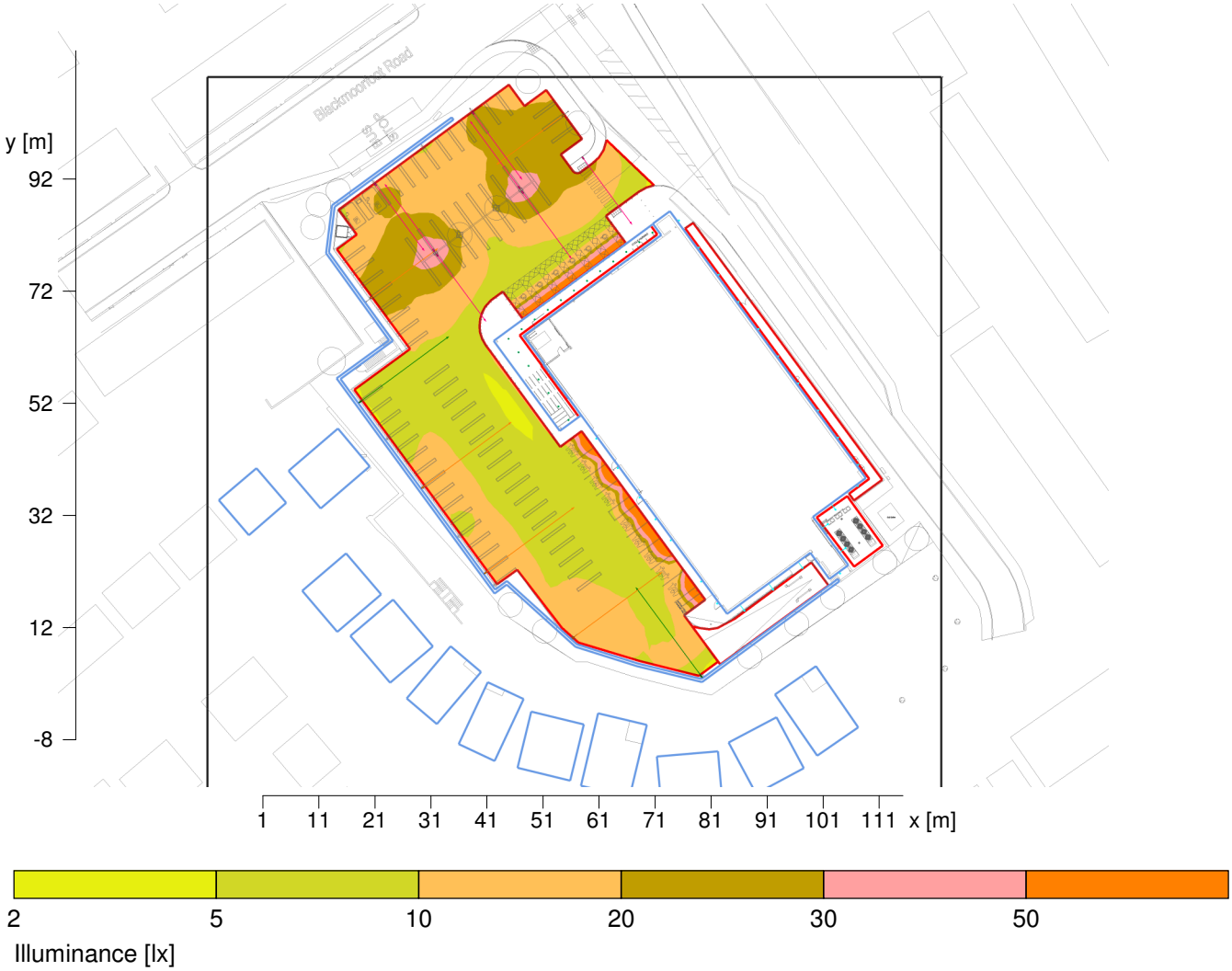
9 25 x
Order No. :
Luminaire name : LL-E 3000K
Equipment : 1 x LED42S/830 25.5 W / 3900 lm

10 2 x
Order No. :
Luminaire name : LL-C BL2 3000K
Equipment : 1 x LED75-4S/830 51.8 W / 7500 lm

1 Carpark

1.3 Calculation results, Carpark

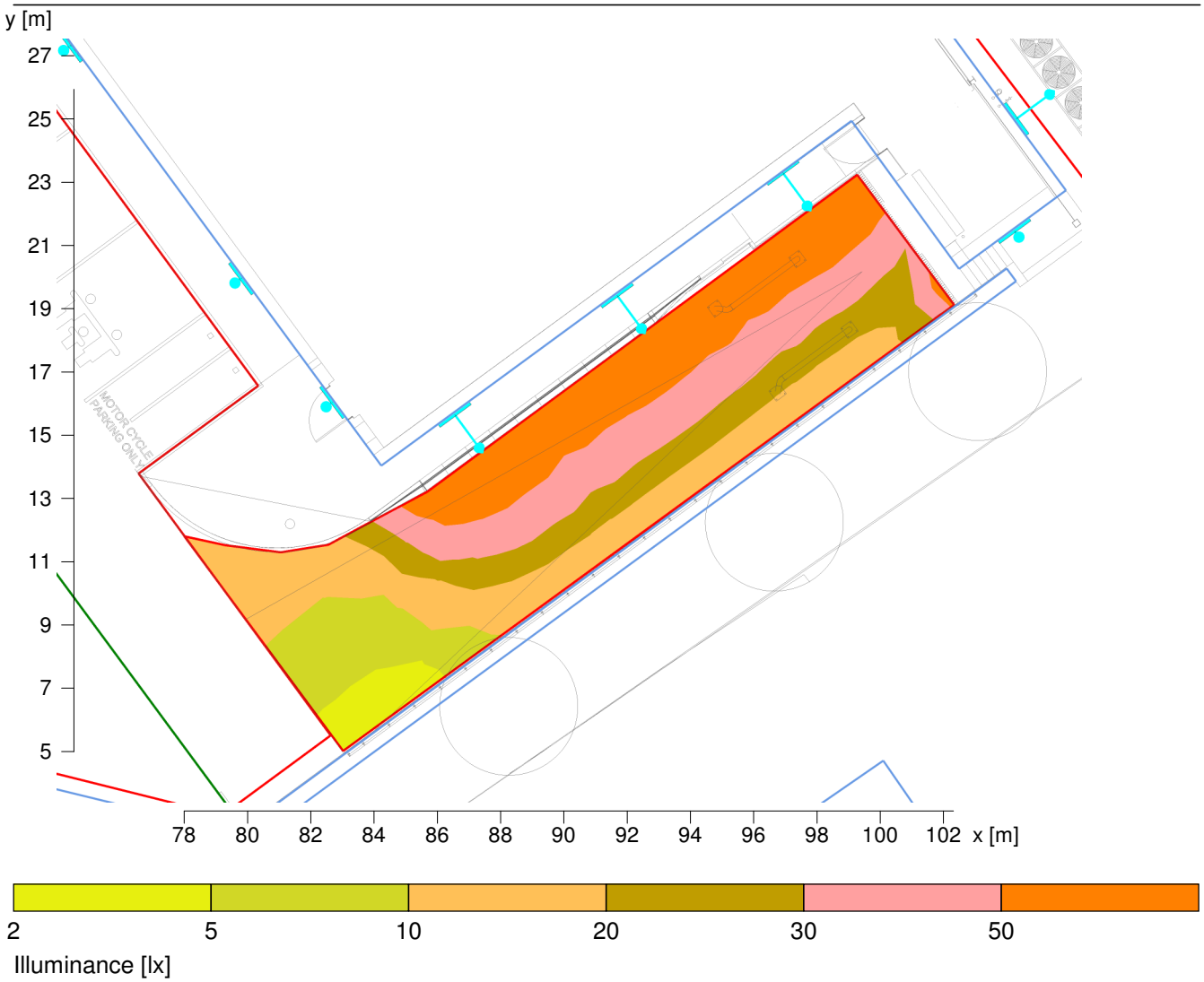
1.3.1 Pseudo colours, Carpark (E)



Height reference plane		: 0.00 m
Average illuminance	$\bar{E}_m$	: 14.8 lx
Minimum illuminance	E_{min}	: 4.4 lx
Maximum illuminance	E_{max}	: 99 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 3.35 (0.30)
Diversity U_d	E_{min}/E_{max}	: 1 : 22.40 (0.04)

1.3 Calculation results, Carpark

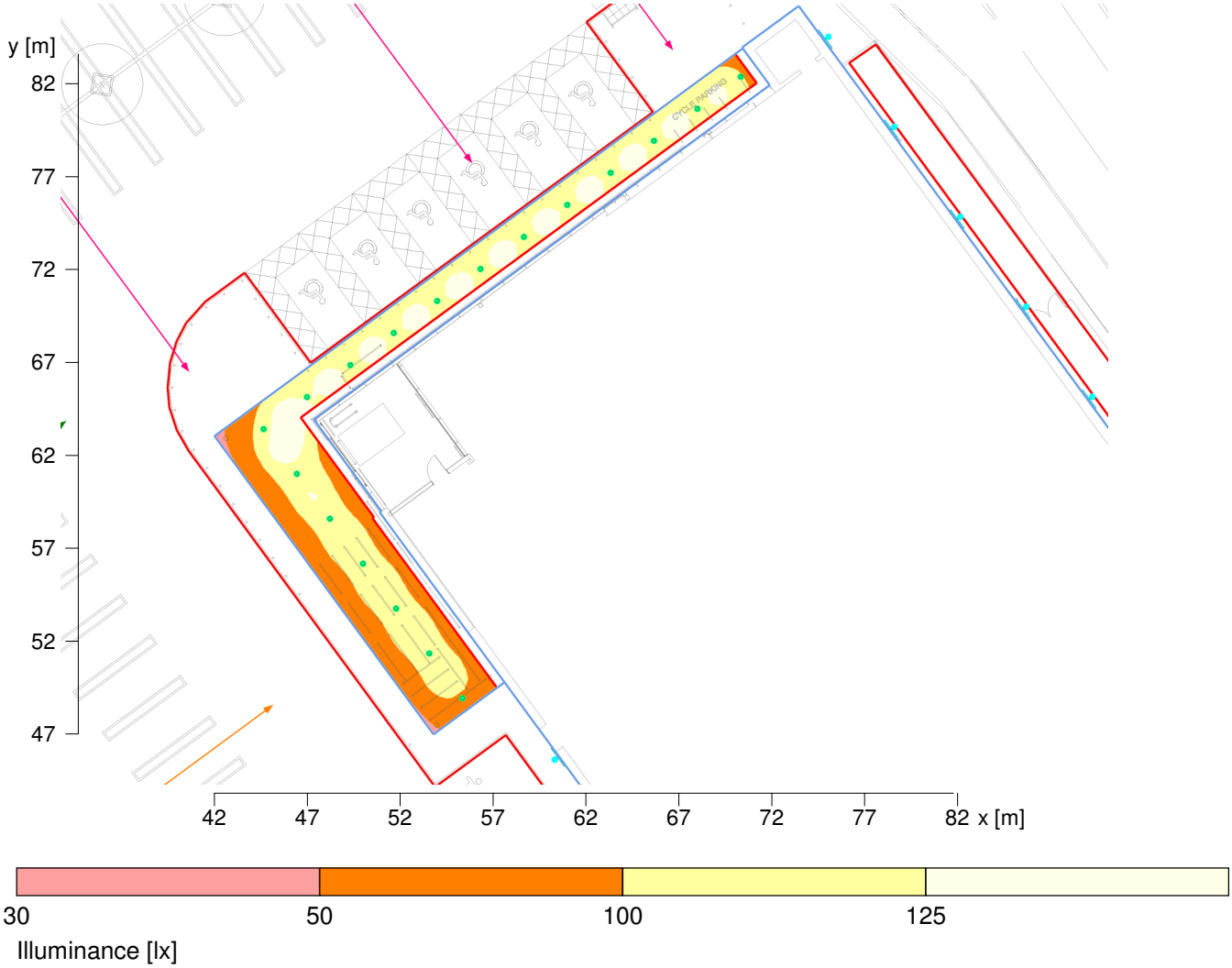
1.3.2 Pseudo colours, Lorry Bay (E)



Height reference plane		: 0.00 m
Average illuminance	$\bar{E}_m$	: 32.2 lx
Minimum illuminance	E_{min}	: 3.6 lx
Maximum illuminance	E_{max}	: 72.2 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 8.83 (0.11)
Diversity U_d	E_{min}/E_{max}	: 1 : 19.82 (0.05)

1.3 Calculation results, Carpark

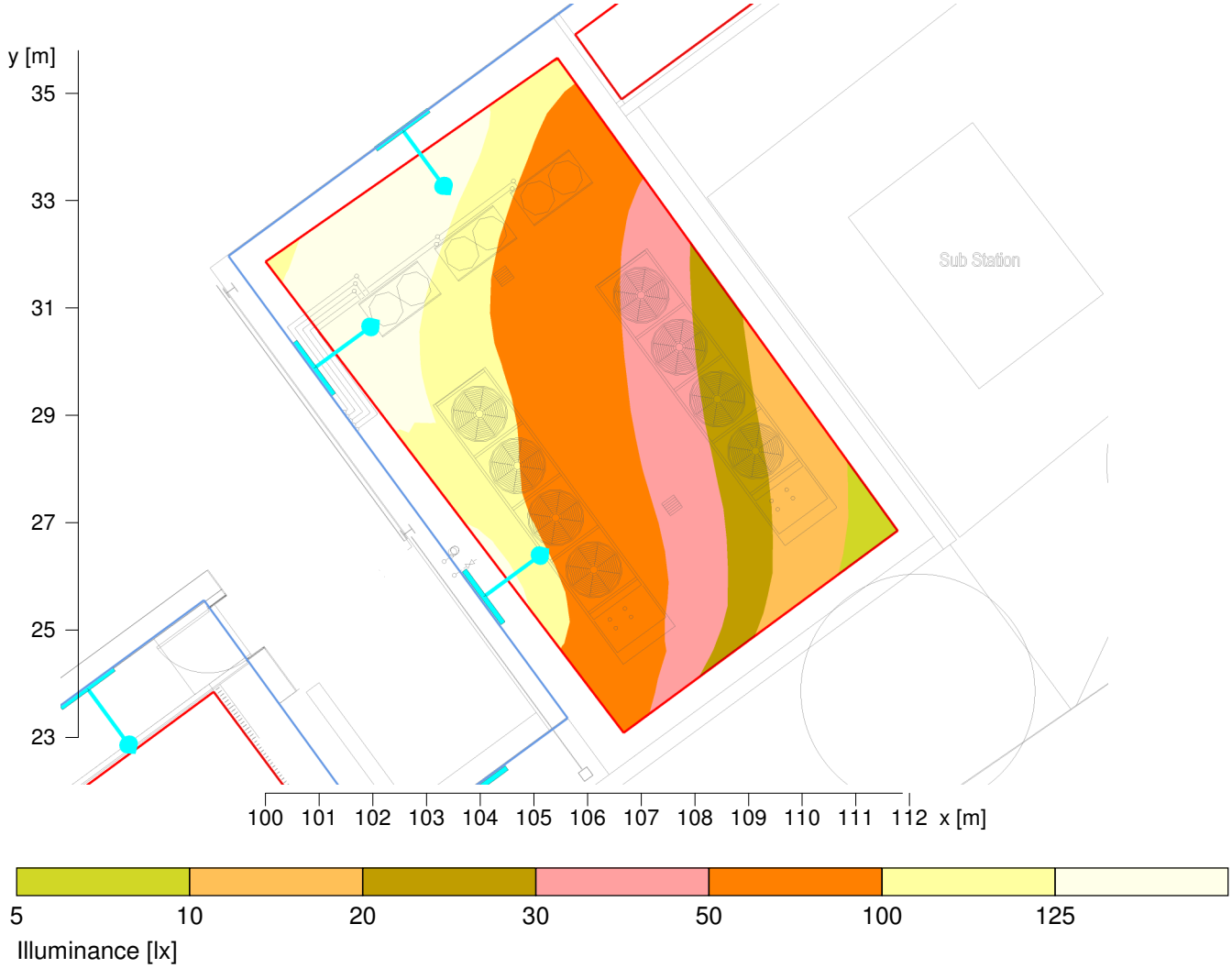
1.3.3 Pseudo colours, Canopy Area (E)



Height reference plane		: 0.00 m
Average illuminance	$\bar{E}_m$	: 108 lx
Minimum illuminance	E_{min}	: 42 lx
Maximum illuminance	E_{max}	: 144 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 2.60 (0.38)
Diversity U_d	E_{min}/E_{max}	: 1 : 3.46 (0.29)

1.3 Calculation results, Carpark

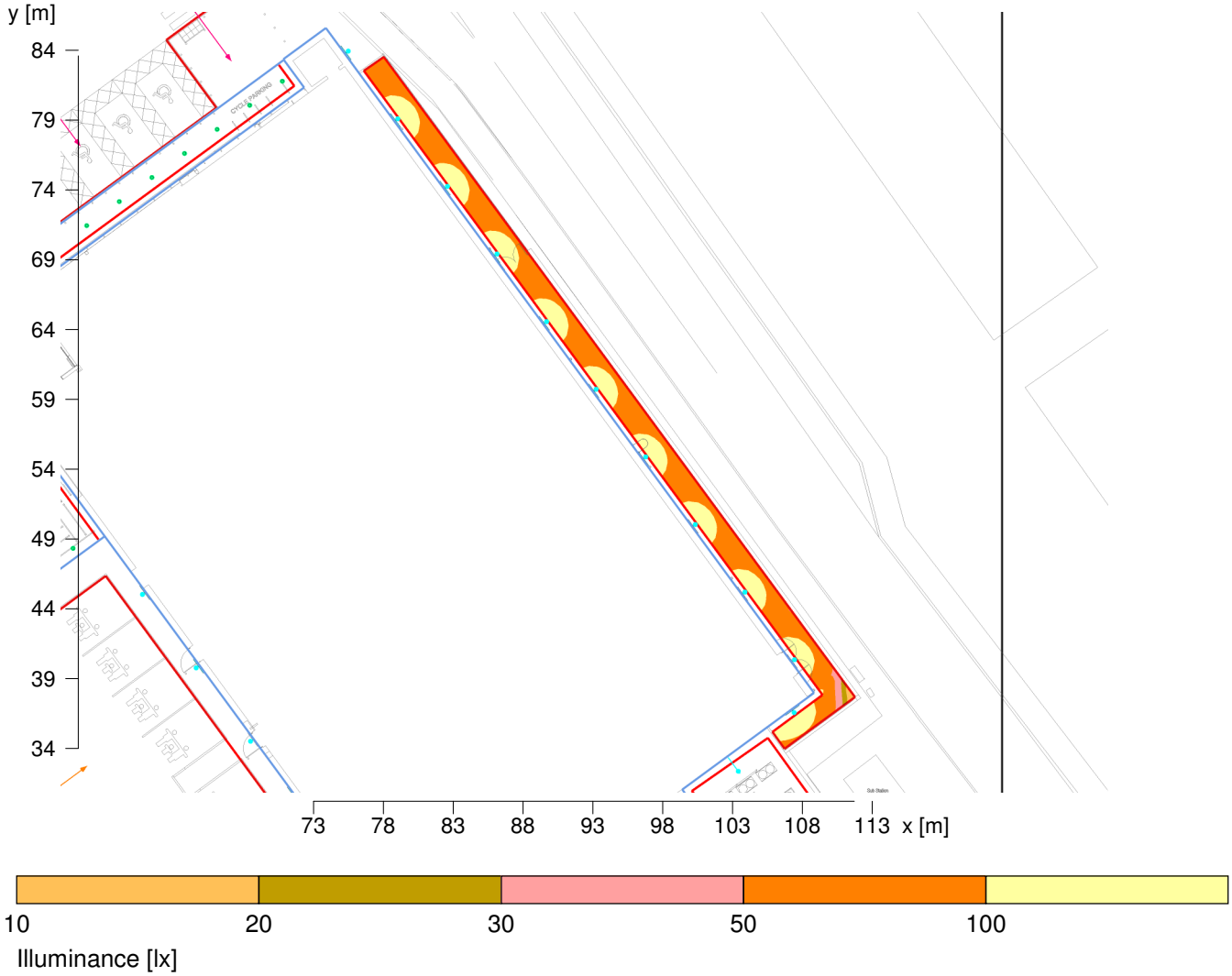
1.3.4 Pseudo colours, Plant (E)



Height reference plane		: 0.00 m
Average illuminance	$\bar{E}_m$	: 76 lx
Minimum illuminance	E_{min}	: 7 lx
Maximum illuminance	E_{max}	: 162 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 10.95 (0.09)
Diversity U_d	E_{min}/E_{max}	: 1 : 23.22 (0.04)

1.3 Calculation results, Carpark

1.3.5 Pseudo colours, MoE Footpath (E)

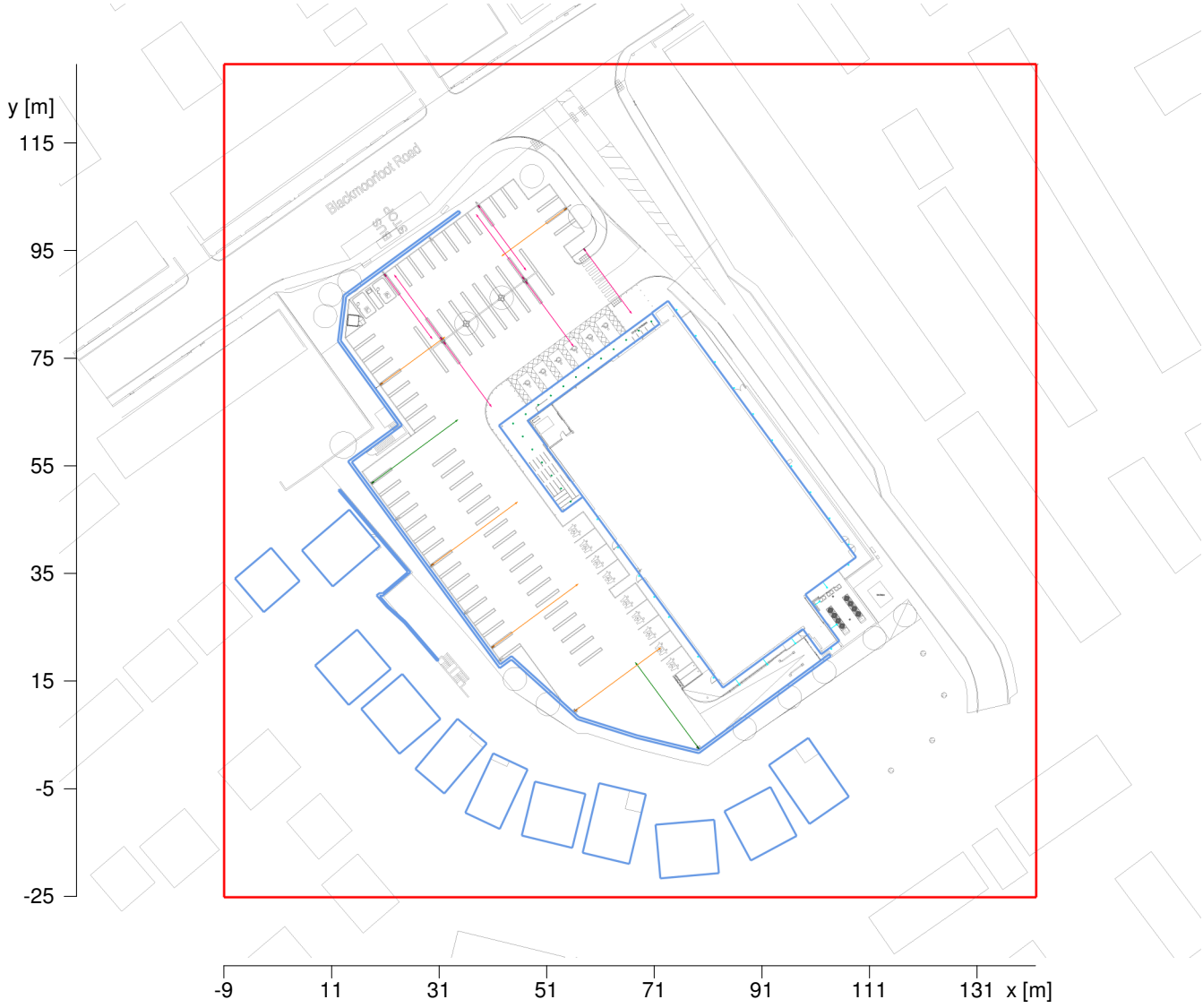


Height reference plane		: 0.00 m
Average illuminance	$\bar{E}_m$	: 89 lx
Minimum illuminance	E_{min}	: 15 lx
Maximum illuminance	E_{max}	: 120 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: 1 : 5.89 (0.17)
Diversity U_d	E_{min}/E_{max}	: 1 : 7.98 (0.13)

2 Carpark Spill Light

2.1 Description, Carpark Spill Light

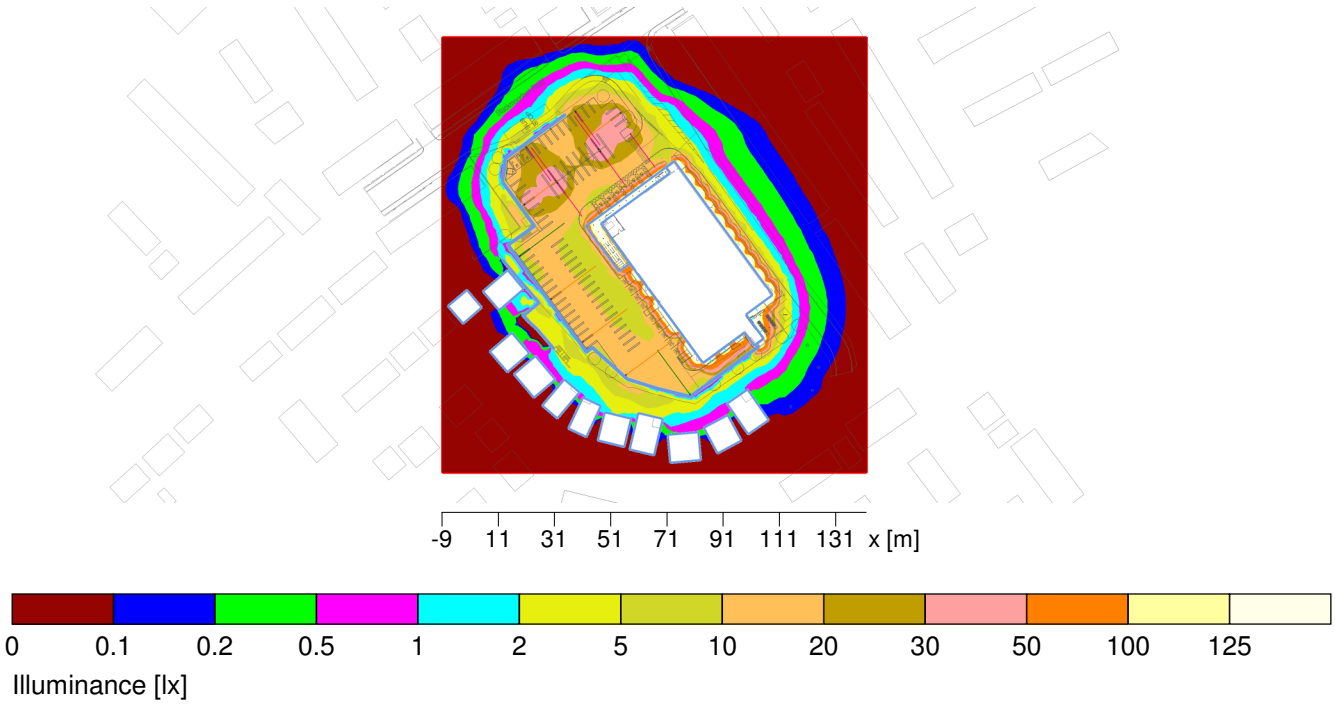
2.1.1 Floor plan



2 Carpark Spill Light

2.2 Summary, Carpark Spill Light

2.2.1 Result overview, Evaluation area 1



General

Calculation algorithm used	Average indirect fraction
Maintenance factor	1.00
Total lamp luminous flux	224980.00 lm
Luminaire luminous flux	203114.86 lm
Total power	1850.9 W
Total power per area (23319.39 m²)	0.08 W/m² (1.00 W/m²/100lx)
Upward light ratio (RUL)	1 %

Evaluation area 1	**Horizontal Spill Light @0M**
	Horizontal
$\bar{E}_m$	7.9 lx
E_{min}	0 lx
$E_{min}/\bar{E}_m$ (U_o)	---
E_{min}/E_{max} (U_d)	---
Position	0.00 m

Type No.\Make

		Philips Lighting	
2	18 x	Order No.	: !
		Luminaire name	: LL-Canopy
		Equipment	: 1 x DLED-4000 33.5 W / 2260 lm

2 Carpark Spill Light

2.2 Summary, Carpark Spill Light

2.2.1 Result overview, Evaluation area 1

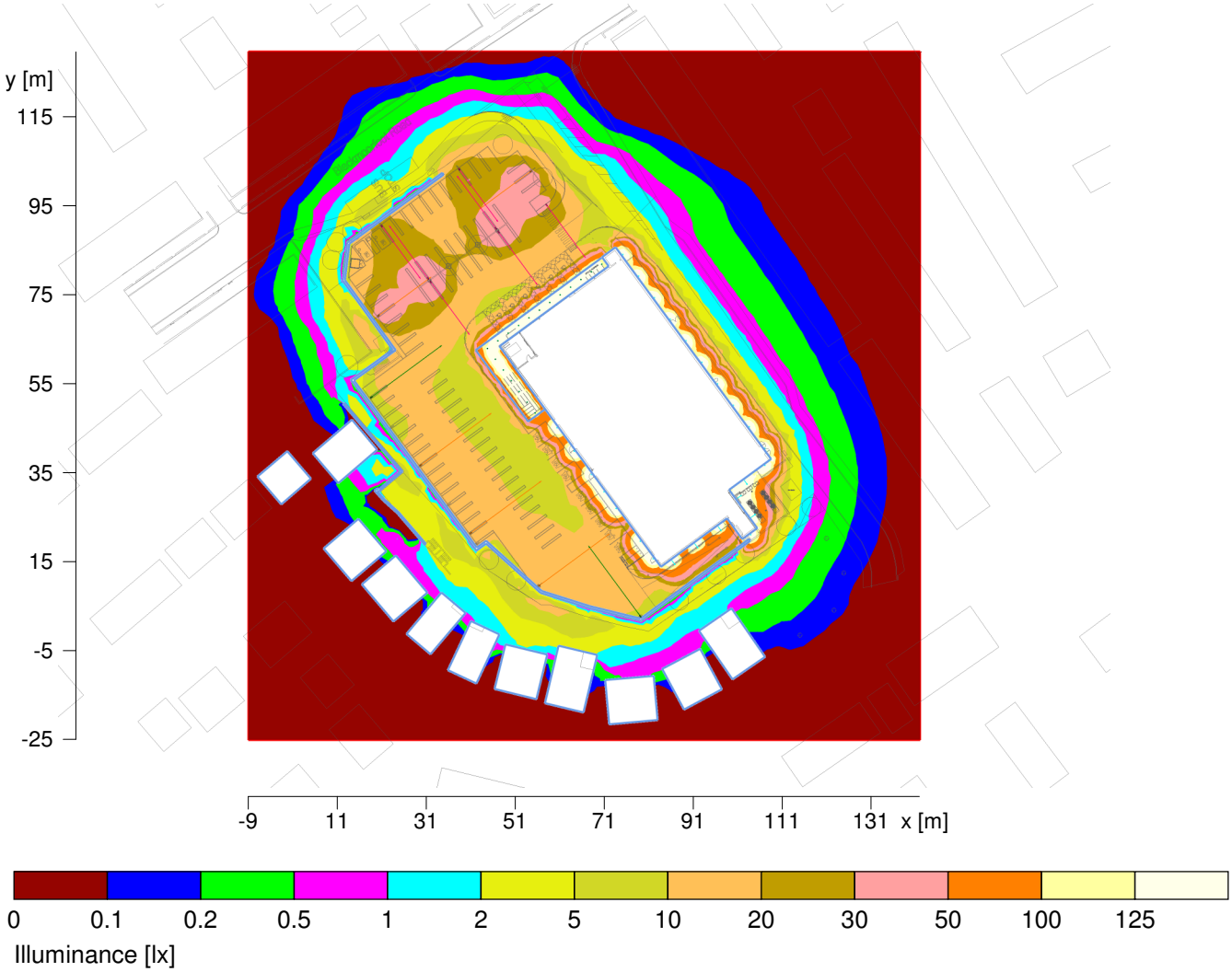
PHILIPS/2025-01-06 Eulumdat/1 B-Tilt = 0.00

7	5 x	Order No.	:
		Luminaire name	: LL-C 3000K
		Equipment	: 1 x LED75-4S/830 51.8 W / 7500 lm
8	7 x	Order No.	:
		Luminaire name	: LL-A 3000K
		Equipment	: 1 x LED49-4S/830 35.4 W / 4900 lm
9	25 x	Order No.	:
		Luminaire name	: LL-E 3000K
		Equipment	: 1 x LED42S/830 25.5 W / 3900 lm
10	2 x	Order No.	:
		Luminaire name	: LL-C BL2 3000K
		Equipment	: 1 x LED75-4S/830 51.8 W / 7500 lm

2 Carpark Spill Light

2.3 Calculation results, Carpark Spill Light

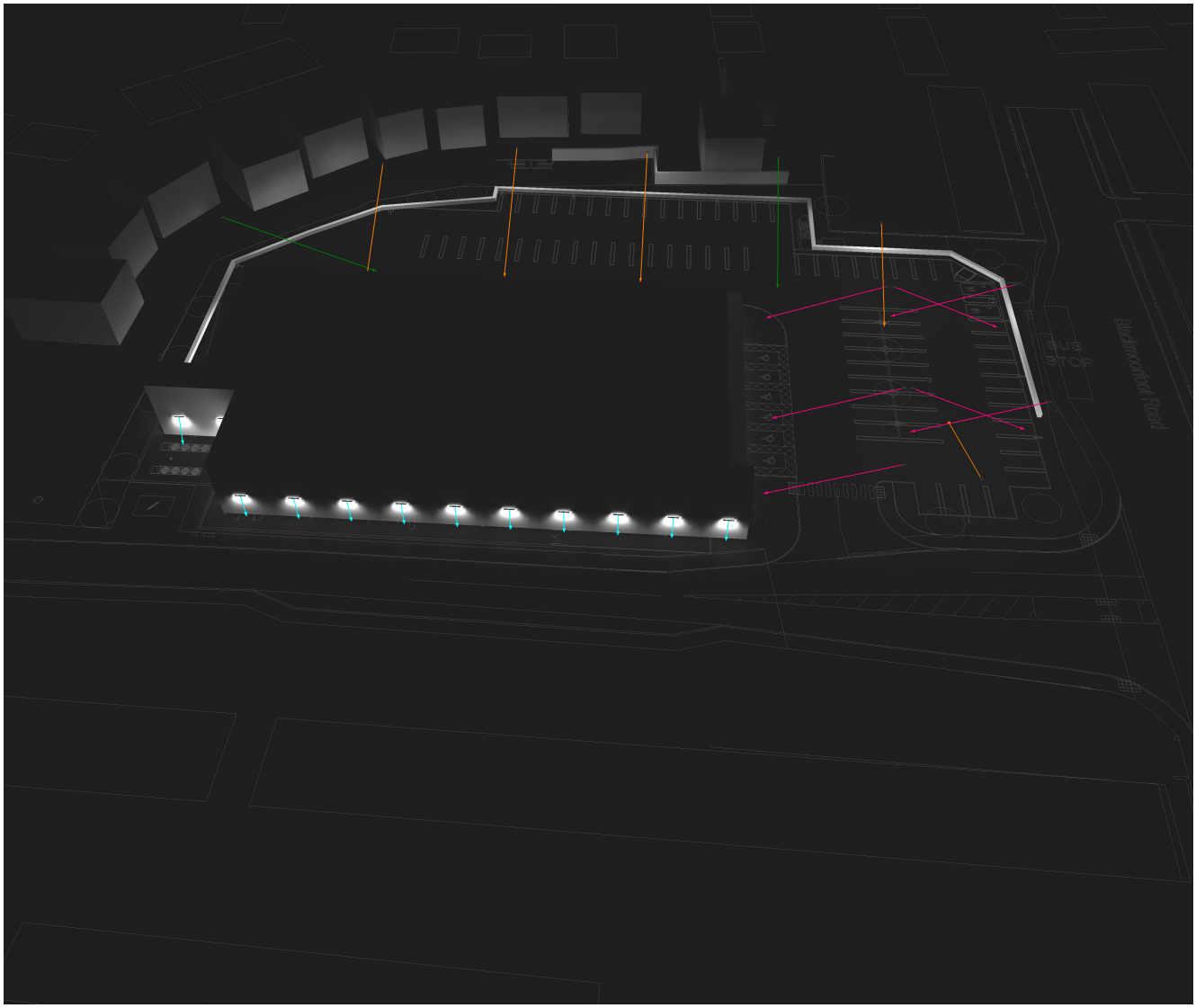
2.3.1 Pseudo colours, Horizontal Spill Light @0M (E)



Height reference plane		: 0.00 m
Average illuminance	$\bar{E}_m$	: 8 lx
Minimum illuminance	E_{min}	: 0 lx
Maximum illuminance	E_{max}	: 185 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	: ---
Diversity U_d	E_{min}/E_{max}	: ---

2.3 Calculation results, Carpark Spill Light

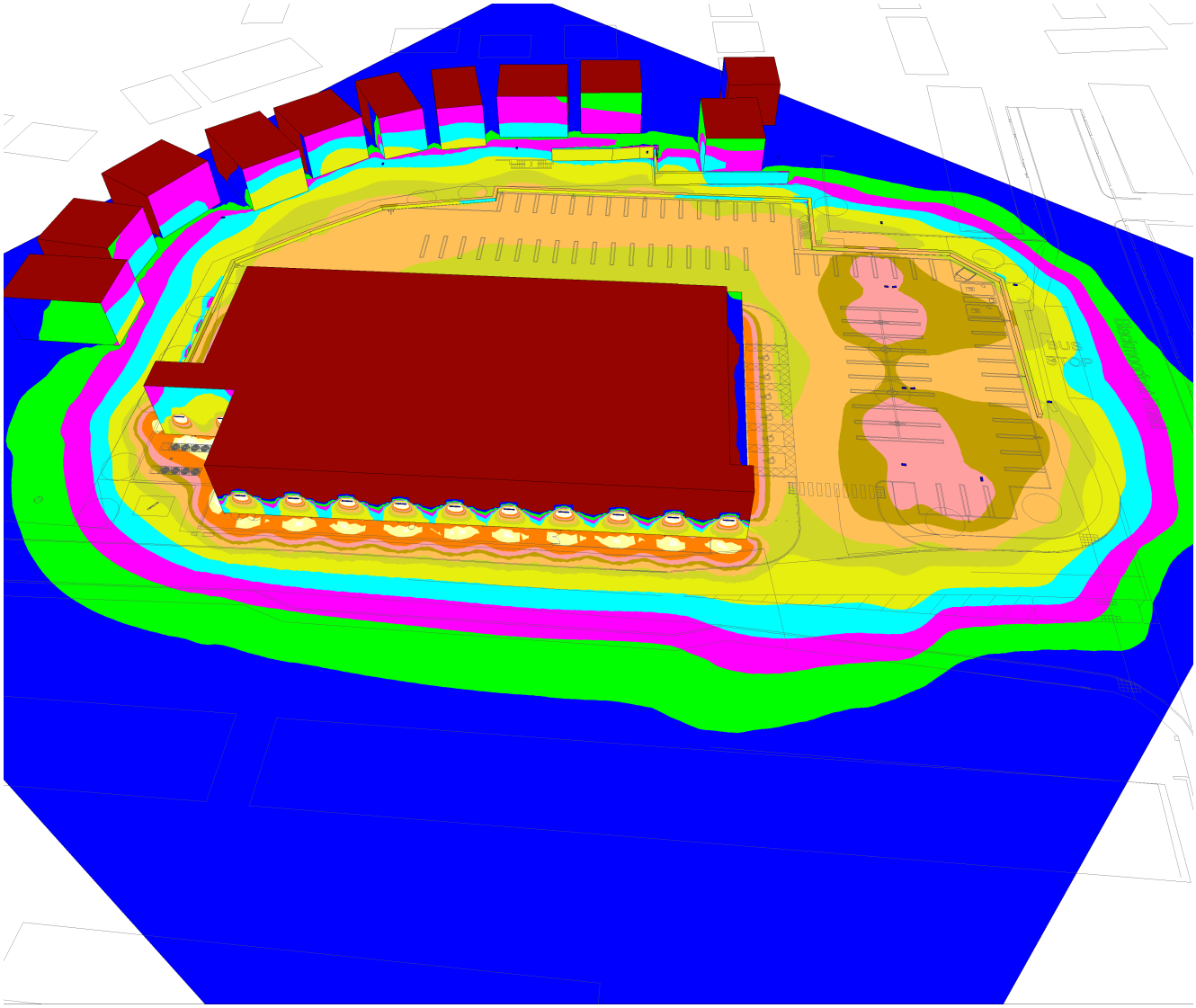
2.3.2 3D luminance, View 1



Luminance in the scene
Minimum: : 0 cd/m²
Maximum: : 640 cd/m²

2.3 Calculation results, Carpark Spill Light

2.3.3 3D pseudo colours, View 1 (E)



Illuminance [lx]