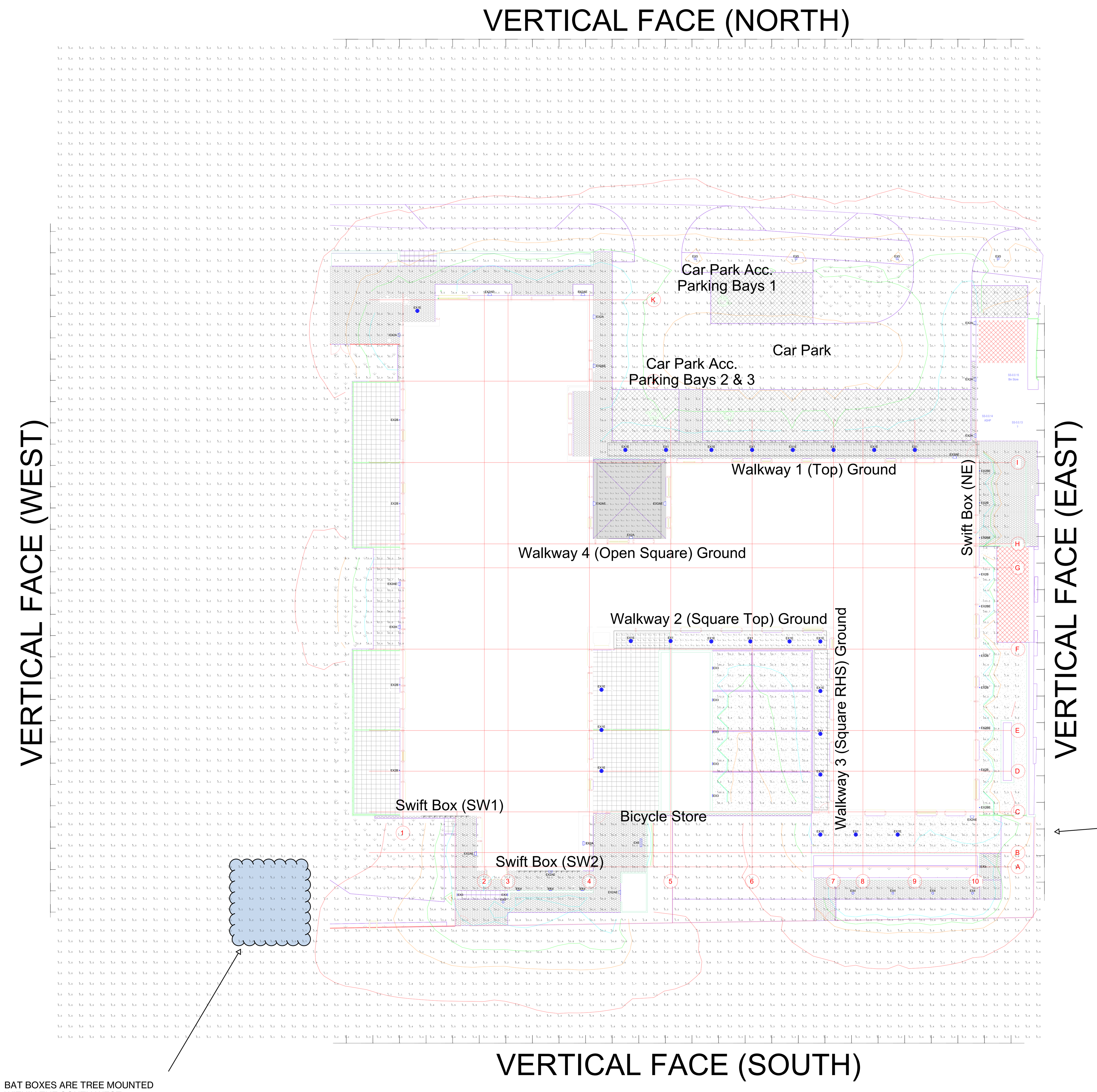


BAT BOXES ARE TREE MOUNTED WITHIN THE SOUTH WEST ELEVATION, AS YOU CAN SEE THE LUX LEVELS IN THIS AREA OF THE SITE ARE VERY MINIMUAL AND DO NOT DISTURB THE BAX BOXES OR EXISTING LANDSCAPING.

No outward light spill into neighbouring property, fence separating boundary which.

Lighting calculations have been modelled to end of site and vertical face of fence which

ISOLINES (LUX)
- 1
- 5
- 10
- 20

SUMMARY OF CALCULATED RESULTS

CALCULATED RESULTS (PRE-CURFEW)

ILLUMINANCE	TARGET*		CALCULATED RESULTS**	
	Eavg	Uni	Eavg	Uni
Walkway 1 (Top) Ground	30-50	0.25	38.84	0.64
Walkway 2 (Square Top) Ground	30-50	0.25	32.51	0.66
Walkway 3 (Square RHS) Ground	30-50	0.25	31.21	0.55
Walkway 4 (Open Square) Ground	30-50	0.25	50.93	0.42
Walkway 5 (RHS) First Floor	30-50	0.25	37.89	0.66
Walkway 6 Second Floor	30-50	0.25	33.59	0.54
Bicycle Storage	30-50	0.40	44.59	0.53
Car Park	5	0.20	11.49	0.20
Car Park Acc Parking Bays 1	5	0.25	6.55	0.60
Car Park Acc Parking Bays 2	5	0.25	15.07	0.40
Car Park Acc Parking Bays 3	5	0.25	11.78	0.38
ILLUMINANCE	TARGET*		CALCULATED RESULTS**	
	Emax	Uni	Emax	Uni
Swift Box (NE)	10	-N.A-	0.30	-N.A-
Swift Box (SW1)	10	-N.A-	0.80	-N.A-
Swift Box (SW2)	10	-N.A-	1.00	-N.A-

OBTRUSIVE LIGHT	TARGET***		CALCULATED RESULTS**	
	Emax	LI (cd)max	Emax	LI (cd)max
Vertical Face (East)	10	10000	9.60	504
Vertical Face (North)	10	10000	2.10	573
Vertical Face (South)	10	10000	3.20	370
Vertical Face (West)	10	10000	0.60	163

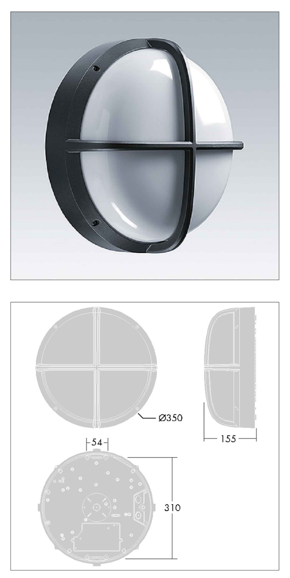
LIGHT POLLUTION	TARGET (%)***	CALCULATED RESULTS**
UWLR	Less Than 5	4.3****

CALCULATED RESULTS (POST-CURFEW)

ILLUMINANCE	TARGET*		CALCULATED RESULTS**	
	Emax	Uni	Emax	Uni
Swift Box (NE)	-N.A-	-N.A-	0.00	-N.A-
Swift Box (SW1)	-N.A-	-N.A-	0.10	-N.A-
Swift Box (SW2)	-N.A-	-N.A-	0.10	-N.A-

OBTRUSIVE LIGHT	TARGET***		CALCULATED RESULTS**	
	Emax	LI (cd)max	Emax	LI (cd)max
Vertical Face (East)	2	1000	1.80	252
Vertical Face (North)	2	1000	0.40	80
Vertical Face (South)	2	1000	0.40	52
Vertical Face (West)	2	1000	0.10	22

LIGHT POLLUTION	TARGET (%)***	CALCULATED RESULTS**
UWLR	Less Than 5	4.3****



TYPE EX1 (Qty. 19) 92926991
EYE CR LED950-830 HFIX S ANT

TYPE EX1E (Qty. 31) TLG7AAAA
EYE CR LED950-830 HFIX S ANT E3D

Ceiling surface mounted.

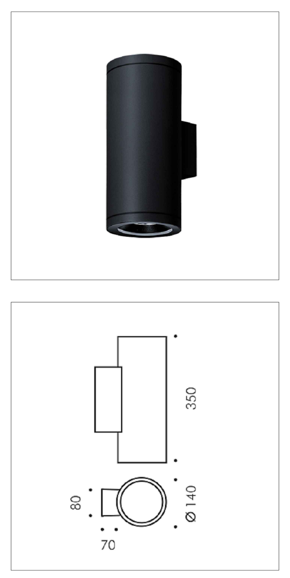
LED-830 (3000K)

TYPE EX2A (Qty. 14) TLGPHASE
PIAZZA II LED 1690-830 HFI ANT

TYPE EX2AE (Qty. 16) TLGPHASE
PIAZZA II LED 1690-830 HFI ANT E3D

Wall surface mounted at approx. 2m AFFL

LED-830 (3000K)



TYPE EX2B (Qty. 9) 96701231
CESAR AMP M DWN 1L930MB RD BK

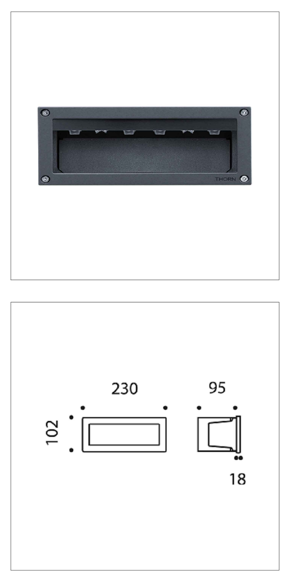
With remote LED DALI driver GB IP67 20W 230V 250-700 CL2 HFX (96700028)

TYPE EX2BE (Qty. 5) 96701231
CESAR AMP M DWN 1L930MB RD BK

With remote LED DALI driver GB IP67 20W 230V 250-700 CL2 HFX (96700028) and remote E3D emergency pack BOXEMIP68CCDDA3 (TLGCUSTM)

Wall surface mounted at approx. 2m AFFL

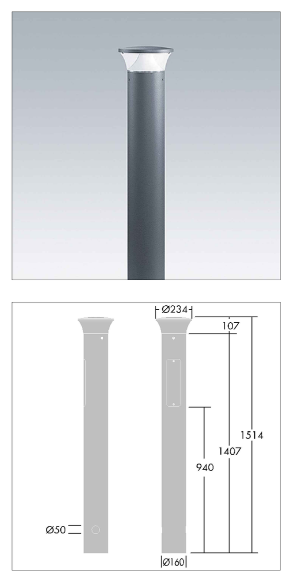
LED-930 (3000K)



TYPE EX3 (Qty. 24) TLGCUSTM
AXYL TRIM L PERF 6L930 A/S HF BK DALI

Wall recessed (as high as practically possible)

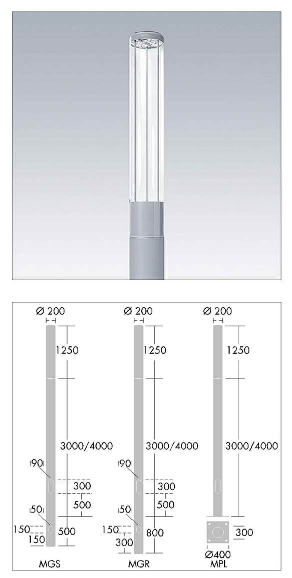
LED-930 (3000K)



TYPE EX4 (Qty. 4) T LG7AAAA
TR B S 10L35 BPSW HFX 730 R/S CL1 MGR

Ground mounted.

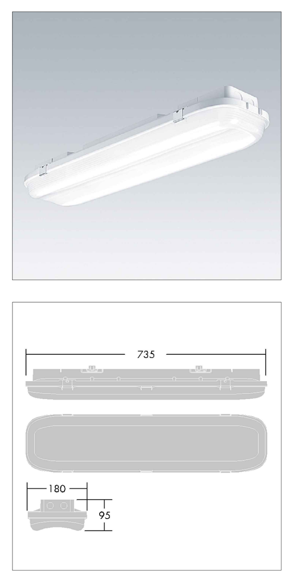
LED-730 (3000K)



TYPE EX5 (Qty. 5) 96274861
ALUMET CD 24L35-730 WSC-A CL HFX CL1 W4

3m ground mounted column COL VAL 3M MGR AL NG GRY (TLGCUSTM)

LED-730 (3000K)



TYPE EX6 (Qty. 1) 92982794
FORCELED 4000 840HFI

Ceiling surface mounted.

LED-840 (4000K)

ZUMTOBEL Group

This design drawing is for a lighting scheme which has been prepared for the client in collaboration with the client and other stakeholders, and is based upon the pre-construction information provided. The lighting scheme should only be installed and maintained by competent persons and in accordance with the design drawings, applicable installation instructions and all applicable laws. No changes should be made to the design of the lighting scheme without formal written approval in advance from ZG Lighting (UK) Limited, to ensure that any risks to health, safety and welfare from any proposed changes can be identified and properly assessed.

NOTES:

This drawing represents the current luminaire selection, locations and calculated results for the external lighting at Hexham Road.

It based on our understanding of the information provided and is for comment/review with the client and design team. They are not exhaustive or definitive.

INFORMATION PROVIDED & USED
HEX-EAL-55-0XX-D-E-5404_Electrical Services - External Lighting_A4 - Authorised (MSC)_T03_1.dwg
And information contained with project E-Mails and conversations up to and including the date shown below.

PROJECT ASSUMPTIONS
Surface Reflectance's = Building (various surface 70%) and Ground (20%)
Maintenance Factor (Light Loss Factor) = 1.00
Illuminance Targets = Varies. Basic illuminance targets stated are based on a combination of recommendations from BS12464-2:2014, CIBSE LG09:2022, BS EN 13201-2:2015, CIE150:2003 & ILP Guidance notes for the reduction of obtrusive light (01/20) and other best practice guidance.

The latest recommendations from CIE150:2017 are generally accepted industry wide to be too stringent regarding source intensities and so almost all external lighting solutions would be expected to fail this part of the CIE150:2017 compliance test.

LIGHTING CALCULATIONS
All areas have been calculated as empty spaces (so with no affect from furniture or obstructions) except the main architectural surfaces.

These lighting calculations show the contribution for the luminaires shown only.

The contribution of any natural light (day or night), spill light from internal lighting and any other luminaires within the space (not shown or provided by others) have not been included or considered in these lighting calculations.

All results shown are calculated with a light loss factor (LLF) aka maintenance factor (mf) of 1.0. Therefore, the results represent that achieved on day 1.
All luminaires are dimmed on day 1 to ensure that the illuminance values can be maintained throughout the project lifetime (so called maintenance dimming)

To achieve all the requirements for pre-curfew all luminaires need to be dimmable and connected to a suitable and commissioned lighting control system.

The precise location of the vertical faces for CIE140:2003 obtrusive light should be confirmed.

LIGHTING DESIGN
The lighting design follows the lighting recommendation as best as possible within the technical and commercial restrictions of the project.

EMERGENCY LIGHTING
The specific building risk assessment was not made available at the time of these calculations but should defined all the building's potential risks and how the "responsible person" wants each risk to be considered. This means that additional emergency lighting may be required.

Some external emergency lighting has been provided to be considered good practice, but has not been calculated. Therefore, compliance with any requirements or the risk assessment is unknown.

FUTURE CHANGES / REVIEW
It is important to note that any changes to the assumptions made and the luminaire layout shown may require the lighting calculations to be reviewed and updated accordingly to establish whether the lighting targets will still be meet.

All layouts should be reviewed by the client/design team to ensure that lighting has been provided to all areas within the scope of design and supply, and that the illumination on each task plane is considered "suitable and sufficient" and compliant with all lighting and planning requirements.

HEX-EAL-55-0XX-D-E-5406 - C02

etch

No.	Date	Revision
03	31/10/24	Additional detail added as requested.
02	17/10/24	Revised lighting layout with results
01	04/10/24	Revised lighting layout with results

Project Title:
Hexham Road, External Lighting
Calculated Results For Pre-Curfew

Area:
Ground Floor Level (Areas Shown Only)
(With Full Calculation Summary)

Client:

Scale:	Project Number: 0002334573
Date: 31/10/24	Rev Number: 03
Drawn By: RP	Checked By: JG

Drawing Number:
ZG-DWG-0002334573-EX1-R03-311024

Drawing Status:
For Approval

ZG Lighting (UK) Ltd, Chiltern Park,
Chiltern Hill, Chalfont St Peter,
Buckinghamshire, SL9 9FG
Tel: 01753 482650

THORN ZUMTOBEL

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Do not scale from this drawing