

## Condition 16 (External lighting scheme)

### CONDITION

No development above ground level (excluding demolition) shall take place until details of an external lighting scheme has been submitted to and approved in writing by the Local Planning Authority. The details must include:

- a) A site plan showing the location of the external lighting (ground based, on building and in roof gardens);
- b) Metrically scaled elevations of the types of external lighting; and
- c) Vertical lux diagrams showing potential light trespass into windows of the approved residential units and neighbouring residential properties outside of the site.

The external lighting scheme must meet the requirements within the Institution of Lighting Professionals guidance notes for the reduction of obtrusive lighting, and should be designed to minimise light spill, in particular directing light away from any boundary vegetation / trees to enable dark corridors to be used by wildlife as well as directing lighting away from potential roost / nesting sites.

The approved details must be implemented prior to first occupation of the development and retained permanently thereafter.

### REASON

To assist with site safety, to protect the living conditions of future occupiers and neighbouring properties in terms of light spill, and to protect wildlife, in accordance with Policies D1, D7, R11 and R20 of the Welwyn Hatfield District Plan 2005; Policies SADM16 and SADM 18 of the Welwyn Hatfield Borough Council Draft Local Plan Proposed Submission August 2016, and the National Planning Policy Framework.

### RESPONSE

To assist with site safety, to protect the living conditions of future occupiers and neighbouring properties in terms of light spill, and to protect wildlife, we have provided details of an external lighting scheme with a site external lighting layout, luminaire schedule and lux diagram.

Attached drawings/schedule sheet under appendices demonstrate that condition has been complied with.

Data sheets	Title	Rev	Date
HAT-EMC-XX-00-DR-E-2701 T01	External lighting layout	T01	26 August 2022
HAT-EMC-XX-XX-SC-E-0011 T01	Luminaire schedule	T01	26 August 2022
46599c	Lux diagram	C	18 July 2022



**GENERAL NOTES:**

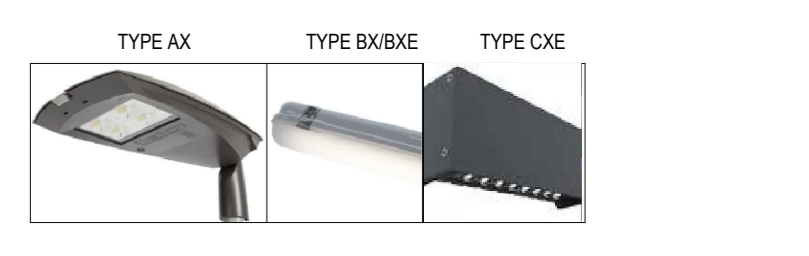
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER M&E SERVICES DRAWINGS, TOGETHER WITH THE ARCHITECTS & STRUCTURAL DRAWINGS AND ASSOCIATED SPECIFICATIONS.
- EMEC DESIGN AND CONSULTANCY LIMITED HAVE NO RESPONSIBILITY FOR ANY USE MADE OF THIS DRAWING OTHER THAN THAT WHICH IT WAS PREPARED AND ISSUED.
- DO NOT SCALE FROM THIS DRAWING, WORK TO MEASURED DIMENSIONS ONLY.
- ANY DISCREPANCIES, ERRORS OR OMISSIONS ARE TO BE CLARIFIED WITH THE RELEVANT ENGINEER AT THE EARLIEST OPPORTUNITY.
- ALL WORKS ARE TO BE IN ACCORDANCE WITH THE CURRENT RELEVANT STATUTORY REGULATIONS, BUILDING REGULATIONS, BRITISH STANDARDS, ACCEPTED CODES OF PRACTICE AND TRADE ASSOCIATION REQUIREMENTS.
- ALL DRAWINGS TO BE APPROVED BY THE RELEVANT STATUTORY BODY TO CONFIRM COMPLIANCE WITH BUILDING REGULATIONS AND STATUTORY REQUIREMENTS.
- EMEC DESIGN AND CONSULTANCY LTD HAVE NO RESPONSIBILITY FOR ANY DESIGN WHICH HAS NOT BEEN APPROVED BY THE RELEVANT STATUTORY BODY.
- IT IS THE RESPONSIBILITY OF THE PRINCIPLE DESIGNER/CONTRACTOR TO SEEK APPROVAL OF ALL DRAWINGS FROM THE BUILDING CONTROL OFFICER, FIRE OFFICER & ANY OTHER RELEVANT STATUTORY BODY.
- FINAL DESIGN FOR ALL FIRE RELATED SERVICES, INCLUDING BUT NOT LIMITED TO, SPRINKLERS, DRY WET RISERS, SMOKE VENTILATION & FIRE ALARM TO BE THE RESPONSIBILITY OF THE SPECIALIST SUB-CONTRACT DESIGNER/INSTALLER.
- FINAL PROJECT CO-ORDINATION OF M&E SERVICES, STRUCTURE, ARCHITECTURE AND FIRE STRATEGY IS THE RESPONSIBILITY OF THE PRINCIPLE DESIGNER/CONTRACTOR.
- EMEC DESIGN AND CONSULTANCY LTD HAVE NO RESPONSIBILITY FOR ANY CO-ORDINATION ISSUES THAT HAVE NOT BEEN REVIEWED/ADDRESSED BY THE PRINCIPLE DESIGNER/CONTRACTOR.
- EMEC DESIGN AND CONSULTANCY LTD RETAIN COPYRIGHT OF ALL DRAWINGS, SCHEDULES AND CALCULATIONS UNTIL SUCH TIME THE CONTRACT IS COMPLETE.

**EXTERNAL LIGHTING NOTES:**

- REFER TO LUMINAIRE SCHEDULE FOR FURTHER DETAILS OF LUMINAIRE SELECTION.
- TYPE BX/AX COMMUNAL LIGHTING MOUNTED ON THE UNDERCROFT OF THE SLAB AND WALL MOUNTED LIGHTS TYPE CX ARE REQUIRED TO BE ON HOURS DAILY. HOWEVER A DIM SETTING SHALL BE USED WHEN THERE IS NO OCCUPANCY TO PROVIDE A BACKGROUND LIGHT LEVEL. UPON DETECTOR FROM THE FIRE, LIGHTS SHALL INCREASE TO 100%.
- EXTERNAL CAR PARK AND WALL MOUNTED LIGHTS (TYPE AX, AXIX & AXIX) ARE TO BE DAYLIGHT CONTROLLED ON THE PHOTOCELL.
- LIGHTING TYPES BX & CXE TO HAVE INTEGRAL 3 HOUR BATTERY PACKS. EMERGENCY TEST KEY SWITCHES TO BE ALLOWED NEXT TO THE EXTERNAL LIGHTING DISTRIBUTION BOARD.

**LEGEND:**

- AX KINGFISHER SINGLE 18W LED 4000K (1 MODULE) 525Hx140L1 WITH 500 OPTIC COLUMN MOUNTED AT 4m
- AXIX KINGFISHER SINGLE 18W LED 4000K (1 MODULE) 525Hx140L1 WITH 500 OPTIC BUILDING MOUNTED AT 3.5m
- AXX KINGFISHER DOUBLE HEAD 2x18W LED 4000K (1 MODULE) 525Hx140L1 WITH 500 OPTIC COLUMN MOUNTED AT 4m
- BX/BXIX KINGFISHER 20W 4000K 150mm (2) CLIMATE EXTRA SINGLE LED ARRAY (STANDARD) CEILING MOUNTED, DIMMABLE OPTION, 'T' DENOTES 3 HOUR EMERGENCY PACKAGE
- CDE 11W LED 4000K 500MM 150MM WALL MOUNTED ABOVE THE EXIT DOORS, DIMMABLE OPTION, 'T' DENOTES 3 HOUR EMERGENCY PACKAGE
- EXIT ILLUMINATED EXIT SIGN, 'IP' DENOTES WEATHERPROOF 'W' DENOTES WALL MOUNTED, 'S' DENOTES SUPPRESSED MOUNTED
- PC PHOTOCELL
- MMPD IP65 MICROWAVE PRESENCE DETECTOR WITH INTEGRAL DAYLIGHT SENSOR
- TDB TDB DISTRIBUTION BOARD
- HTD HEAT DETECTOR IP65 RATED
- HSD HEAT DETECTOR ON SOUNDER BEACON IP65 RATED
- WBP BREAK GLASS UNIT (WBP INDICATES WEATHERPROOF)



T01	TENDER ISSUE	JD	AP	RT	26/09/22
No:	Description:	Orig:	Drawn:	Chk'd:	Date
Revisions:					

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Drawing Status:  
**TENDER**

Client:  
**NEW WAYS CONSTRUCTION LTD**

Project Title:  
**COMET WAY  
 HATFIELD**

Drawing Title:  
**EXTERNAL LIGHTING & FIRE ALARM  
 LAYOUT**








Scale @ A0:	Originator:	Drawn by:	Checked:
1:100	JD	AP	JD
Project No.:	J22045	Date:	AUG '22
Drawing No.:	HAT-EMC-XX-00-DR-E-2701	Revision:	T01

# ELECTRICAL EQUIPMENT SCHEDULE


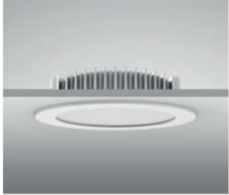

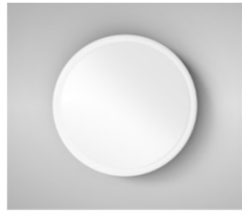



<b>Electrical Schedule:</b>	<b>HAT-EMC-XX-XX-SC-E-0011 LUMINAIRE SCHEDULE</b>
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<b>Project Name:</b>	Comet Way, Hatfield	<b>REV</b>	<b>DATE</b>
<b>Project No:</b>	J22045	T01	26.08.2022
<b>Originated/ Revised By:</b>	OI		
<b>Signed Off By:</b>	JD		

**Apartments - Luminaire Schedule T01**

LUMINAIRE REF	PROPOSED LUMINAIRE	LOCATION	MANUFACTURER AND PRODUCT CODE	DESCRIPTION	LAMP PACKAGE
A		LIVING/DINING (OWNERSHIP ONLY), BEDROOM & HALLWAY	ORLIGHT LIGHTING ORL6009-HS-AW-LP3-7W-3000K-D	RECESSED FIXED DOWNLIGHT FEATURING A MAGNETIC LAMP CHANGE MECHANISM, FIRE RATED RANGE, C/W DIMMABLE LED DRIVER/LAMP	7W GU10 LED, 3000K DIMMABLE Luminaire Efficacy = 96lm/W
B		KITCHEN	ORLIGHT LIGHTING ABW121-4R-LP3-7W-3000K-D	SURFACE MOUNTED 4 No.SPOTLIGHTS MOUNTED ON TRACK, 270 DEGREE ROTATION, C/W DIMMABLE LED DRIVER/LAMP	7W GU10 LED, 3000K DIMMABLE Luminaire Efficacy = 96lm/W
C		BATHROOM	ORLIGHT LIGHTING AQUASPOT-FG-WH-9016-LP3-7W-3000K-ND	RECESSED DOWNLIGHT WITH DOUBLE-TEMPERED SAFETY GLASS, FIRE RATED RANGE, IP65 RATED	7W GU10 LED, 3000K, Luminaire Efficacy = 96lm/W
D		UTILITY CUPBOARD	ORLIGHT LIGHTING ORLPNDE27-KIT +TDE27LED-10W	WALL/CEILING MOUNTED BATTEN HOLDER	10W E27 LED, 3000K, Luminaire Efficacy = 107lm/W
H		LED STRIPLIGHT UNDER KITCHEN CABINET	ORLIGHT LIGHTING ORLTE6024EVO-3000K-CRI90-2500mm + ORLRPVALUHS-TP7	LED STRIPLIGHT IP65 RATED, DIMMABLE OPTION	9.4W/M LED, 3000K DIMMABLE Luminaire Efficacy = 77 lm/w
S		BATHROOM MIRROR LIGHT + SHAVER SOCKET	TBC BY ARCHITECT	AS PER ARCHITECT'S SPECIFICATION	LED LAMP Luminaire Efficacy = Above 60 lm/w
P		LIVING/DINING (SOCIAL RENTED ONLY)	ORLIGHT LIGHTING CYMBAL + SUSPENSION KIT	HEAT RESISTANT PENDANT SET, C/W DIMMABLE LED DRIVER/LAMP	35W LED, 3000K, DIMMABLE Luminaire Efficacy =77lm/W
X		BALCONY	ORLIGHT LIGHTING ORL3010-DS	WALL MOUNTED LED LUMINIARE, DOWNLIGHT ONLY, 3000K, IP65 RATED, C/W INTEGRAL PHOTOCCELL	7W GU10 LED, 3000K, Luminaire Efficacy = 96lm/W

**Communal Areas Luminaire Schedule P01**

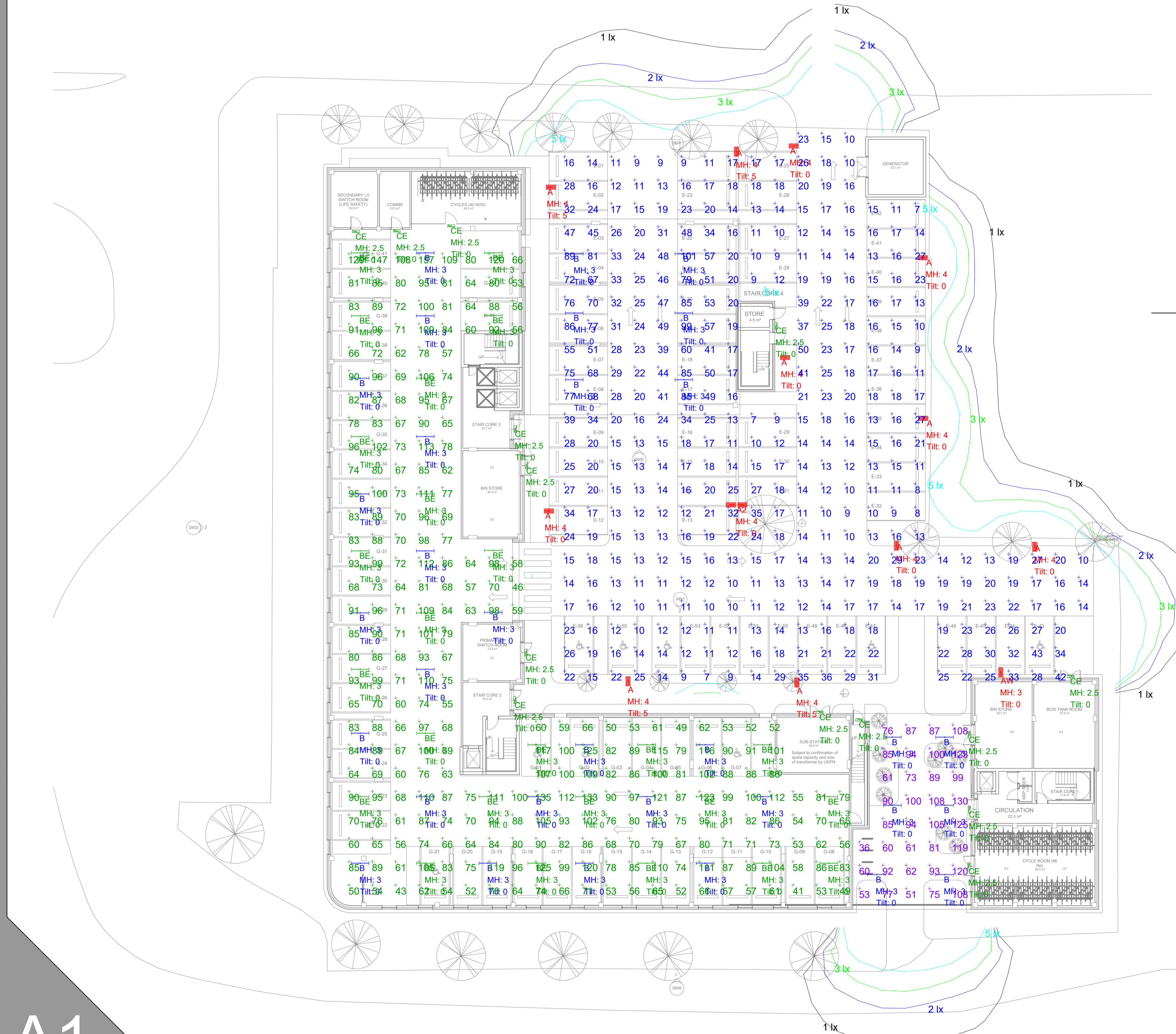
<b>LUMINAIRE REF</b>	<b>PROPOSED LUMINAIRE</b>	<b>LOCATION</b>	<b>MANUFACTURER AND PRODUCT CODE</b>	<b>DESCRIPTION</b>	<b>LAMP PACKAGE</b>
<b>A1/A1E</b>		CORRIDOR, ENTRANCE LOBBY	ORLIGHT LIGHTING EZZ-181-16W-WH-3K	RECESSED LED DOWNLIGHT WITH ALUMINIUM HOUSING BODY, IP65 RATED, C/W SUITABLE FIRE HOOD, DALI DIMMABLE	16W LED, 4000K Luminaire Efficacy = 122lm/W A1E = 3 HR EM VERSION
<b>A2/A2E</b>		ENTRANCE LOBBY STAIRCORE 1	ORLIGHT LIGHTING EZZ-181-20W-WH-3K	RECESSED LED DOWNLIGHT WITH ALUMINIUM HOUSING BODY, IP65 RATED, C/W SUITABLE FIRE HOOD, DALI DIMMABLE	20W LED, 4000K Luminaire Efficacy = 119lm/W A2E = 3 HR EM VERSION
<b>B1/B1E</b>		PLANT ROOM, SWITCHROOM, COMMS ROOM, BIN STORE, CYCLE STORE, RISER	ORLIGHT LIGHTING ORLWP5-36W-LED	WATERPROOF LINEAR LED SURFACE/SUSPENDED LUMINAIRE, POLYCARBONATE DIFFUSER, IP65 RATED	36W LED, 4000K Luminaire Efficacy = 142lm/W B1E = 3 HR EM VERSION
<b>C1/C1E</b>		STAIRCASE	ORLIGHT LIGHTING LEO355-WH-4000K	ARCHITECTURAL SURFACE/WALL MOUNTED LED LUMINAIRE, WHITE POLYCARBONATE DIFFUSER AND BODY, DALI DIMMABLE	23W LED, 4000K Luminaire Efficacy = 74lm/W C1E = 3 HR EM VERSION
<b>D1/D1E</b>		RISER	ORLIGHT LIGHTING ORL1551S-LED	SURFACE/WALL MOUNTED LED LUMINAIRE, WHITE POLYCARBONATE DIFFUSER AND BODY, IP65 RATED	23W LED, 4000K Luminaire Efficacy = 74lm/W D1E = 3 HR EM VERSION
<b>EXIT (W)</b>		EMERGENCY ESCAPE ROUTES	ORLIGHT LIGHTING ORLEXTBX	WALL MOUNTED NON-MAINTAINED EMERGENCY EXIT LED LUMINAIRE	1 x 3W LED LAMP 3 HR EM VERSION
<b>EXIT (S)</b>		EMERGENCY ESCAPE ROUTES	ORLIGHT LIGHTING ORLEXTSUS	SUSPENDED MOUNTED NON-MAINTAINED EMERGENCY EXIT LED LUMINAIRE	1 x 3W LED LAMP 3 HR EM VERSION

<b>E1</b>		ROOF AREAS AND TERRACES	ORLIGHT LIGHTING ORLWPS9-LED	SUSPENDED MOUNTED MAINTAINED EMERGENCY LED BULKHEAD, C/W EMERGENCY SIGN WHERE REQUIRED IP65 RATED	1 x 6W LED LAMP 3 HR EM VERSION
<b>E2</b>		4TH FLOOR TERRACE	ORLIGHT LIGHTING GUIDE-WH-6K-EM	SUSPENDED MOUNTED MAINTAINED EMERGENCY LED TWIN SPOTLIGHT, C/W EMERGENCY SIGN WHERE REQUIRED IP65 RATED	1 x 6W LED LAMP 3 HR EM VERSION
<b>F1</b>		4TH & 5TH FLOOR TERRACES	ORLIGHT LIGHTING SABRE	LED ARCHITECTURAL BOLLARD, IP65 RATED	26W LED, 4000K Luminaire Efficacy = 45lm/W
<b>AX</b>		OPEN CAR PARK	KINGFISHER LIGHTING ITALO 1	LED COLUMN WITH STREET OPTIC, IP65 RATED, MOUNTED AT 4 M	16W LED, 4000K Luminaire Efficacy = 112lm/W BXE = 3 HR EM VERSION
<b>BX/BXE</b>		UNDERCROFT CAR PARK	KINGFISHER LIGHTING CLIMATE EXTRA	WATERPROOF 1540 MM LINEAR LED SURFACE/SUSPENDED LUMINAIRE, POLYCARBONATE DIFFUSER, IP65 RATED, DALI DIMMABLE	24W LED, 4000K Luminaire Efficacy = 141lm/W
<b>CX/CXE</b>		BUIDING PERIMETER, UNDERCROFT CAR PARK	KINGFISHER LIGHTING SEMITA URBAN	RECTANGULAR RECESSED WALL LUMINAIRE DIE-CAST ALUMINIUM, DALI DIMMABLE	11W LED, 4000K, Luminaire Efficacy = 136lm/W CXE = 3 HR EM VERSION



Symbol	Qty	Label	Arrangement	Description	Lum. Lumens	LLF
	11	A	SINGLE	16w LED 4000k (1 module) 525mA Italo 1 with S05 Optic column mounted at 4m.	1800	0.900
	1	AW	SINGLE	16w LED 4000k (1 module) 525mA Italo 1 with S05 Optic column mounted at 3m.	1800	0.900
	1	AZ	BACK-BACK	2 x 16w LED 4000k (1 module) 525mA Italo 1 with S05 Optic column mounted at 3m.	1800	0.900
	32	B	SINGLE	24w 4000k 1540mm (5R) Climate Extra Single LED Array (Dimmable) ceiling mounted at 3m.	3401	0.900
	25	BE	SINGLE	24w 4000k 1540mm (5R) Climate Extra Single LED Array Emergency (Dimmable) ceiling mounted at 3m.	3401	0.900
	14	CE	SINGLE	11w LED 4000k Semita Urban Emergency bulkhead with street optic wall mounted at 2.5m.	1506	0.900

Label	CalcType	Units	Avg	Max	Min	Min/Avg	Min/Max
External Car Park	Illuminance	Lux	22.34	101	7	0.31	0.07
Indoor Car Park	Illuminance	Lux	81.11	157	41	0.51	0.26
Under Canopy	Illuminance	Lux	87.63	130	36	0.41	0.28



## BREEAM New Construction 2018 (UK)

46599 Volkswagen Hatfield Comet Way Hatfield AL10 9TF

Colour Temperature (K)	Qty	Range	Light source	Luminaire Lumens (lm)	Watts (W)	lm/W	LOR	Total Lumens	UOR	Upward Lumens	CRB	** AET Hour Per Day	CO <sub>2</sub> (Tonnes)	kWh/Year
4000	14	Italo 1	S05 - 1 Module 525mA	1800	16	112.50	100%	25200	0.0%	0	>70	12	0.21	983.12
4000	37	Climate Extra	24w LED SPT	3401	24	141.71	100%	125837	0.0%	0	>70	12	1.26	3991.84
4000	14	Semita Urban	11w LED S7	1506	11	136.91	100%	21084	0.0%	0	>70	12	0.14	674.52

EN54 - 2011

Table 1 Compliance

Environmental Zone: E3

Sky Glow	Target	Achieved	Status
	5.00%	0.00%	Pass

Source Intensity (Candelas)	Pre-Curfew	Post-Curfew	Status
	10,000	1,000	Pass

Light Trespass Into Windows (lux)

Pre-Curfew	Post-Curfew	Status
10	2	Pass

Building Luminaire (cd/m<sup>2</sup>)

Pre-Curfew	Post-Curfew	Status
10	2	Pass



Part of the LUCECO group of companies

Total Installation Lumens: 240141.00 Total Upward Light: 0.00%

Total CO<sub>2</sub> Per Year (Tonnes): 1.63

Total Electric Consumption (kWh): 1.75

Total Electric Consumption Per Year (kWh): 7647.48

Average Luminaire Lumens Per Circuit Watt: 137.54

Compliance Status

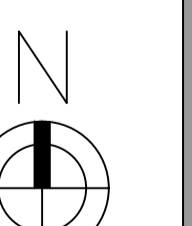
Reduction of Night Time Light Pollution: Pass

Energy Efficient External Lighting: Pass

Internal And External Lighting Levels: Pass

Note: \*HEAT in this report only applies to exterior lighting

\*\*AET = Average Hour Time



Volkswagen Hatfield Comet Way Hatfield AL10 9TF		Scale: 1:200 at A1	Project Number: D46599C
		Date: 18 July 2022	Drawing No.: D46599/RD/C
For our LED lighting designs a 0.9m has been used. If this differs from the maintenance period for this project then you must advise us accordingly.		Lighting Designer: Robert Dagley	
A lighting applications design service is provided by us in good faith and without charge, relating to Kingfisher products only. As such, whilst every endeavor is made for accuracy from information provided by yourselves, the final responsibility for the suitability of the design lies with the client. The company cannot, therefore, accept any liability or consequential loss incurred.			