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Spring Park Expansion – P6 Corsham

Land South of Westwells Road

External lighting report

11 April 2024

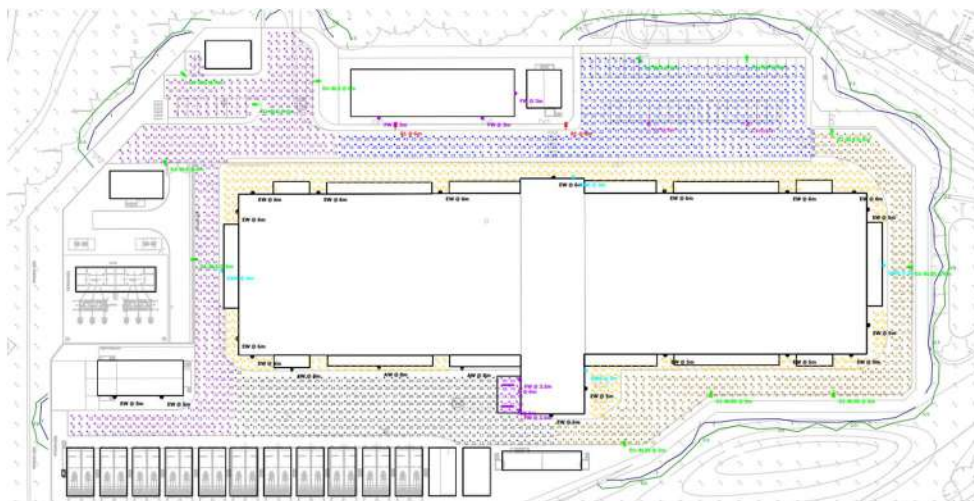


Spring Park Expansion – P6 Corsham Land South of Westwells Road External lighting report

Building P6,
Spring Park,
Land South of Westwells Road,
Corsham

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11 April 2024



Version	Date	Author	Checked	Details
P01	12 May 2023	LC	PJL / AK	RIBA Stage 2 Issue
P02	25 May 2023	LC	PJL / AK	Appendix A updated in accordance with TylerGrange comments
P03	25 May 2023	LC	PJL / AK	Updated in accordance with Savills comments
P04	11 April 2024	LC	PJL / AK	Site Plan Updated

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1.0 Introduction to Project

This document has been produced to identify the 'Stage 2' external lighting installation for the Spring Park Expansion – P6 Corsham development located on the land south of Westwells Road, Corsham and ensuring compliance with the conditions of Planning Permission.

The associated 'Stage 2' lighting lux plots within this report have been based upon the information from the external lighting design calculation.

The lighting lux plots which have been produced are based upon the 'Stage 2' external lighting scheme which demonstrates that the lighting does not impact on the adjacent ecological corridors which have been identified as bat habitat especially within the protected wildlife corridors and the area of retained and improved woodland. All proposed external luminaires are designed to minimise light spillage into adjacent areas utilising efficient and well controlled manufactured optics and shielding with careful consideration of their placement within the external lighting scheme.

2.0 Design Consideration

2.1 General

The external lighting scheme has been designed to address the conditions of the Planning requirements. The effects of light pollution have been carefully assessed and considered to ensure any potential nuisance pollution to neighbouring premises and the effects of sky glow caused by upward light spillage is fully addressed.

The lighting design has also addressed energy efficiency as well as the impact on the surrounding wildlife. The Environment Agency identifies how artificial external lighting affects the local wildlife by creating a false dawn which can disrupt bird's behaviour and disrupting tree and plant habits that are controlled by the day length.

To ensure the proposed development addresses the issues of light pollution, the external lighting shall be designed, installed and commissioned in conjunction with the requirements of the following design guidance documents:

- The Environmental Protection Act 1990 – (Section 79)
- Clean Neighbourhood and Environment Act 2005 – (Section 102)
- CIBSE Lighting Guide LG6
- BS 5489-1:2013 - Code of Practice for Design of Road Lighting
- BS EN 13201-3:2016 – Road Lighting
- CIBSE Guidance Notes for/ Reduction of Light Pollution
- ILP Guidance Note 08/18: Bats and artificial lighting in the UK.

2.2 Proposed Lighting level.

The proposed external lighting scheme for building P6 has been based upon not exceeding the average lighting levels (at ground level), in conjunction with the requirements of, BS5489, BS EN 13201 and CIBSE Lighting Guide LG6.

The tables below details both the proposed average and minimum illuminance levels in Lux for the proposed external lighting scheme.

Scheme Design Lux Levels			
Area Description	Proposed Average, illuminance (lux)	Proposed Minimum illuminance (lux)	
Entrance & Car park	11	3	
Loading Bays	70	56	
Building Perimeter	17	0	
Service Road	16	2	
Service Road West	15	4	
Service Road South	24	8	

Scheme Design Lux Levels		
Lighting Pollution	0	0
Car Park	14	4

2.3 Glare control and lighting pollution assessment.

The proposed external lighting design has been based upon utilising LED luminaires with zero upward light components and high-quality control optics, in conjunction with light baffles to prevent any back spillage of light into the adjacent ecological corridor. Full consideration has been given to minimising the following:

- Light Spill
- Upward Light and Upward Reflected Light
- Direct Glare
- Light Scatter

The specification of the proposed LED luminaires will ensure a high-quality product, with good photometric control characteristics.

2.4 Lighting Control

The lighting control proposed in the P6 scheme design is based upon dividing the external lighting installation into a minimum of two external lighting control channels which serve the access roads and service yards areas. This allows for the option of a reduced lighting level for security purposes, with the main lighting control being provided via a photocell and time switch arrangement.

The wall mounted lighting on the building perimeter will be controlled via photocell and presence detection (with manual override).

The lighting for generators will be used only for maintenance purpose and controlled via time switch, presence detection and photocell with manual override.

Emergency lighting will be provided on site located directly above the building exit doors in accordance with BS5226. Emergency lighting will be provided via converted luminaires (maintained mode) with 3h batteries integrated into designated luminaires.

The proposed external lighting control measures shall comprise of:

- Wall mounted luminaires which shall be dimmed by 50% output to 1000 Lumen.
- Dusk to Dawn photocell sensor shall be installed to control external lighting during hours of darkness.
- The VCR Security Room will be provided with the facility to operate dimmer switches to allow security staff to raise or lower associated external lighting to suit operational requirements.
- When Dusk to Dawn sensor activates to turn off lighting the external lighting levels will reset and when called for (next Cycle) will return at 50% output.

- External maintenance Staircases and Maintenance Roof Lighting;

The external staircases and roof lighting will be available during dusk to dawn period and will only initiate when the maintenance lighting switches are operated. These maintenance light switches will also then provide the facility for local switching. Should the Luminaires be inadvertently left on they will automatically switch off when the dusk to dawn sensor activates on detection of day light. In addition, the luminaires will not automatically re-illuminate during the next cycle until either of the switches are operated.

3.0 Conclusion

Based on the 'Stage 2' External lighting information, the lux plot calculations are provided within the Appendix.

The 'Stage 2' External lighting plots demonstrate that the external lighting levels are within the requirements of the Planning Conditions. It is evident also from the external lighting calculation plots that for the areas that are outside of the P6 site boundary the lux levels are zero. This ensures that there is no adverse effect to the surrounding areas, which is especially important to the ecological corridor on the northern boundary.

Energy efficiency of the proposed external lighting system is addressed by ensuring automatic lighting control measures are designed and applied to the scheme. The light sources shall be all low energy use, utilising quality LED luminaires with long life.

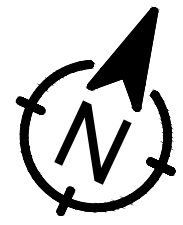
The provision of the temporary site lighting installation during the construction phase of the works would be fully assessed to ensure that the external lighting is purely limited to localised lighting to meet the requirements dictated by the Planning Condition.

4.0 Luminaire Schedule

Schedule of luminaires			
Ref	Image	Description	Lumen Output (Lm)
AW		Wall Mounted on Bracket @ 8m 0°Tilt. Holophane: D-Series	17044
A1		Column Mounted @ 8m 0°Tilt. Holophane: D-Series	17044
B1		Column Mounted @ 6m 0°Tilt. Holophane: Denver iD: Pole	12730
C1		Column Mounted @ 6m 0°Tilt. Holophane: Denver iD: Pole	6521
D1-BLS		Column Mounted @ 6m 0°Tilt, with back shield. Holophane: Denver iD: Pole	4941
F1-BLS		Column Mounted @ 5m 5° Tilt, with back shield. Holophane: Denver iD: Pole	4941
F1-BLS5		Column mounted luminaire C/W 5m column with back shield. Holophane: Denver iD: Pole	4941

Schedule of luminaires			
EW		Wall Mounted @ Height Shown Holophane: WALLPACK	5500
FW		Wall Mounted @ 3m Holophane: Denver iD: Wall	1442
GWE		Wall Mounted @ 3m Maintained emergency. Holophane: Denver iD: Wall	1442
H		Canopy Mounted @ 6m Holophane: D-Series 1	5621

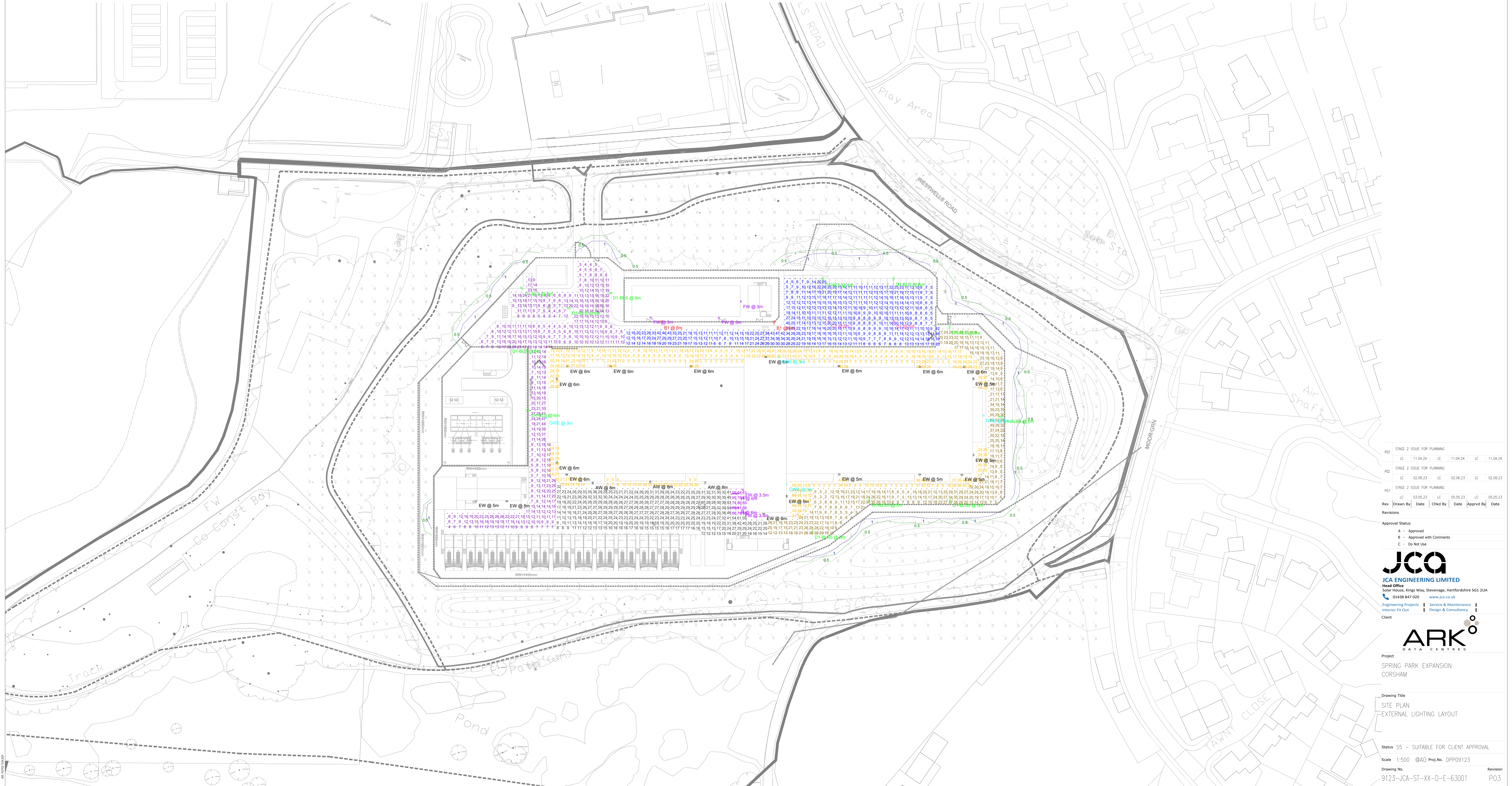
5.0 Appendix A – Proposed external lighting layouts with lux plot.



NOTES:
FOR BUILDING LAYOUTS AND DESCRIPTION REFER TO ARCHITECTURAL DRAWING 22077-PL1101.

Schedule					
Symbol	Label	Quantity	Catalog Number	Description	Lumens Per Lamp Wattage
	AW	3	DSK1.2.LA164.FW	Wall Mounted on Bracket @ 8m OTIR	17044 131
	A1	0	DSK1.2.LA164.FW	Column Mounted @ 8m OTIR	17044 131
	B1	2	DPL.1.LA114.AY.W078	Column Mounted @ 6m 0 TIR	12730 78
	C1	2	DPL.1.LA064.SY.W048	Column Mounted @ 6m OTIR	6521 48
	D1-BLS	8	DPL.1.LA054.AY.EBLS.W038 (DPL.BLS1.C9)	Column Mounted @ 6m 0 TIR With Back Shield	4941 38
	D1-BLS5	4	DPL.1.LA054.AY.EBLS.W038 (DPL.BLS1.C9)	Column Mounted @ 5m 5 TIR With Back Shield	4941 38
	EW	19	WAP.1.LA064.AY	Wall Mounted @ Height Shown	5550 50
	FW	5	DWL.1.LA024.AY.W011	Wall Mounted @ 3m	1442 10.3
	QWE	4	DWL.1.LA033.NR.W018.E.M	Wall Mounted @ 3m Maintained emergency - Exact Location TBC	2355 18
	H	2	VAL.LA054	Canopy Mounted @ 6m	5621 55

Statistics					
Description	Symbol	Avg	Min	Min/Avg	
Entrance & Car Park	+	11 lux	3 lux	0.27	
Loading Bays	+	70 lux	56 lux	0.80	
Perimeter	+	17 lux	0 lux	0.00	
Service Road	+	16 lux	2 lux	0.13	
Service Road West	+	15 lux	4 lux	0.27	
Service Yard South	+	24 lux	8 lux	0.33	
SPILL	+	0 lux	0 lux	N/A	
Car Park	+	14 lux	4 lux	0.29	



R13	STAGE 2 ISSUE FOR PLANNING			
	LC	11.04.24	LC	11.04.24
R12	STAGE 2 ISSUE FOR PLANNING			
	LC	02.08.23	LC	02.08.23
R11	STAGE 2 ISSUE FOR PLANNING			
	LC	03.05.23	LC	05.05.23

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Revisions

- Approval Status
- A - Approved
 - B - Approved with Comments
 - C - Do Not Use

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Client

ARK
DATA CENTRES

Project
SPRING PARK EXPANSION
CORSHAM

Drawing Title
SITE PLAN
EXTERNAL LIGHTING LAYOUT

Status S5 - SUITABLE FOR CLIENT APPROVAL

Scale 1:500 @A0 Proj.No. OPP09123

Drawing No. 9123-JCA-ST-XX-D-E-63001

Version P03