

Ecology Technical Note: Review of External Lighting Scheme in Relation to Bats

Broadwater Farm Estate - Tangmere Phase

Presented to Formation Design and Build

Issued: 10th April 2026

Lucion Delta-Simons Project Number: 142018.700448

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
1	Final	10/04/2026		Caley Nevin Consultant Ecologist	Jonathan Spencer Associate Director – Ecology Team Lead	Jonathan Spencer Associate Director – Ecology Team Lead

1.0 Context and Purpose

Lucion Delta-Simons Ltd ('Lucion') has been instructed by Formation Design and Build ('the Client') to undertake a review of an external lighting scheme in relation to bats for the redevelopment of the Tangmere Phase of the Broadwater Farm Estate, Lond, N17 ('the Site'). It is understood that the Site is to be redeveloped including the erection of mixed-use buildings with associated hard and soft landscaping (the 'Proposed Development').

The report is required to aid in the partial discharge of Condition 55 included in the decision notice issued by Haringey Council for the approved planning application HGY/2022/0823, which states:

"55) (a) Prior to the commencement of above ground works within each Phase, details of ecological enhancement measures and ecological protection measures within that Phase shall be submitted to and approved in writing by the Council. This shall detail the biodiversity net gain, plans showing the proposed location of ecological enhancement measures, a sensitive lighting scheme, justification for the location and type of enhancement measures by a qualified ecologist, and how the development will support and protect local wildlife and natural habitats.

2.0 External Lighting Proposals

Based on the provided Outdoor Lighting Report produced by Urbis Schreder Limited (Appendix A), it is understood the proposed external lighting design comprises the installation of two types of luminaire, both of which are to be pole mounted.

All external lighting is at a colour temperature of 4000 Kelvin. Details on the luminaires to be used can be found in the Outdoor Lighting Report.

3.0 External Lighting Review

To minimise any adverse impact upon commuting and foraging bats within the Site, the proposed external lighting scheme has been designed in order to provide a safe environment and facilitate movement along the proposed pathways when natural lighting levels fall, whilst also meet light obtrusion limitations in order to avoid negative impacts on bat species.

With reference to the BCT & ILP (2023) Bats and Artificial Lighting at Night Guidance Note 08/23, the specification / justification is set out below:

- The proposed luminaire utilises LEDs without a UV component, therefore, reducing the attraction of invertebrates to the lights, such that bat species more tolerant to lighting will not be drawn to them. This is in line with Guidance Note 08/23: Bats and artificial lighting in the UK (ILP/Bat Conservation Trust);

- The luminaires emit a neutral-warm white spectrum of 4000 Kelvin (°K). It is understood that warmer colour temperatures with peak wavelength of ~3000°K cause less impacts on bats (Stone, 2012, 2015a, 2015b). Although higher than the recommended 3000°K, given the Site's urban nature and lack of upward lighting spill, this is considered acceptable. The warmer white spectrum also reduces the blue light component, therefore, reducing the attraction of invertebrates.
- The luminaire has been chosen to achieve a 'dark sky' standard of illuminance with tightly controlled optics and zero upward light spill to minimise disturbance to bats. This is in line with Guidance Note 08/23: Bats and artificial lighting in the UK (ILP/Bat Conservation Trust).
- Following review of the Outdoor Lighting Report (Appendix A), artificial illuminance levels across the Site are considered appropriate given the Site's primary function as an urban, mixed-use development with higher lux levels along pedestrian paths and the courtyard. The impact of shading of artificial lighting due to buildings and trees has not been incorporated into the Outdoor Lighting Report, and so lux levels in areas of the Site are likely to be lower than that shown.
- The lighting strategy has been designed in order to limit light levels across nearby ecological receptors. The most significant nearby receptors comprise the southern boundary, where gardens from the proposed 'Townhouses' back onto gardens of existing residential properties. Lux levels in the area will be approximately 0 lux, leaving a dark corridor for bats to commute across the Site. Additionally, lux levels at locations of proposed bat boxes will be between 0 – 1 lux.

4.0 Conclusion

Following a review of Outdoor Lighting Report (Appendix A), provided that the lighting is implemented as designed, it is considered likely that the landscape lighting strategy will not result in significant adverse impacts upon bats utilising habitats within the Site for foraging and commuting.

Enc:

Appendix A Outdoor Lighting Report

Appendix A – Outdoor Lighting Report

DATE: 2 February 2026
DESIGNER: WB
PROJECT No: OP57855LSS12176 Court Yard Broadwater Farm
PROJECT NAME: OP57855LSS12176 Court Yard Broadwater Farm

Urbis Schröder | Design


Designed to BS5489-1:2020
- Roads: Category P3
1.5lux minimum illuminance & 7.5-11.25lux average illuminance
- Court Yard: Category P4
1lux minimum illuminance & 5-7.5lux average illuminance

Maintenance Factor calculated to BS5489, TS22012 & GN11
fLF = Luminous flux factor for 100,000hours - 100%
fS = Survival factor - 0.97% (representing 3% failures)
fLM = Mounting height: 6m or less, Cleaning frequency - 72
months, Environmental zone – E3/E4 - 0.84
fSM = Surface factor - 1 (Exterior Lighting only)
Overall fM = 0.81 (CLO N/A)

Outdoor Lighting Report

This design has been prepared in accordance with the HEA/HEMSA Guidance Note - CDM2015 Regulations, Issue 1.1 dated 09/04/15 - Procedure 2 for an outline design. The information in this report does not account for installation considerations, site conditions or provide any form of risk assessment. Urbis' design service is advisory only and it is the responsibility of the recipient of this information to verify that the design is suitable for the intended application. No account is taken for the blocking effect caused by buildings, trees etc. The calculation shown assumes that the whole area considered is in the same plane.

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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	532882.00	189999.00	125.00	154.00	1.49	1.50
2	Grid 2	532887.00	190004.00	27.00	147.00	1.50	1.50
3	Grid 3	532901.00	190121.00	88.00	33.00	1.49	1.50
4	Grid 4 - Court Yard	532913.90	190054.30	57.00	74.00	1.50	1.48

Luminaires

Luminaire A Data



Supplier	Urbis
Type	AXIA 2.1 5166 Integrated lenses 16 OSLO N SQUARE GIANT@480mA
Lamp(s)	16 OSLO N SQUARE GIANT@480mA NW 740 230V 1x00-36-648 - DRIVER
LampFlux(klm)/Colour	3.65 4000K/70
File Name	AXIA 2.1 5166 16 OSLO N SQUARE GIANT 480mA NW 740 24.7W 464222 Integrated ...
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	1083.7, 150.6, 1.2
No. in Project	21

Luminaire B Data



Supplier	Urbis
Type	PILZEO 5304 Deep shape PC 10 LEDs LE D@500mA Driver@500mA NW
Lamp(s)	10 LEDs@500mA NW 740 230V 04-16-057
LampFlux(klm)/Colour	2.42 NW 4000K/70
File Name	PILZEO 5304 10 LEDs Drv 500mA NW 740 16.2W 534052 Deep shape PC 230V TF.Idt
Maintenance Factor	0.81
Imax70,80,90(cd/klm)	354.1, 115.6, 10.5
No. in Project	6

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	532911.99	190043.19	6.00	97.00	0.00	0.00	0.40			
2	A	532929.61	190056.42	6.00	274.00	0.00	0.00	0.40			
3	A	532951.61	190047.58	6.00	97.00	0.00	0.00	0.40			
4	A	532968.40	190061.00	6.00	278.00	0.00	0.00	0.40			
5	A	532992.54	190051.88	6.00	97.00	0.00	0.00	0.40			
6	A	532985.88	190074.07	6.00	187.00	0.00	0.00	0.40			
7	A	532972.83	190084.48	6.00	3.00	0.00	0.00	0.40			
8	A	532983.06	190103.83	6.00	192.00	0.00	0.00	0.40			
9	A	532968.62	190121.75	6.00	7.00	0.00	0.00	0.40			
10	A	532977.00	190137.10	6.00	190.00	0.00	0.00	0.40			
11	A	532903.27	190064.01	6.00	174.00	0.00	0.00	0.40			
12	A	532888.72	190047.63	6.00	357.00	0.00	0.00	0.40			
13	A	532896.62	190026.89	6.00	172.00	0.00	0.00	0.40			
14	A	532888.78	190091.89	6.00	4.00	0.00	0.00	0.40			
15	A	532900.69	190111.29	6.00	190.00	0.00	0.00	0.40			
16	A	532884.54	190129.94	6.00	5.00	0.00	0.00	0.40			
17	A	532912.89	190132.73	6.00	99.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
18	A	532932.77	190149.30	6.00	277.00	0.00	0.00	0.40			
19	A	532953.09	190136.86	6.00	97.00	0.00	0.00	0.40			
20	A	532895.76	190145.45	6.00	278.00	0.00	0.00	0.40			
21	A	532976.43	190154.38	6.00	279.00	0.00	0.00	0.40			
22	B	532925.13	190080.39	5.00	61.00	0.00	0.00	0.00			
24	B	532943.96	190111.70	5.00	245.00	0.00	0.00	0.00			
25	B	532951.10	190085.51	5.00	156.00	0.00	0.00	0.00			
26	B	532921.73	190109.82	5.00	322.00	0.00	0.00	0.00			
26	B	532921.10	190066.66	5.00	354.00	0.00	0.00	0.00			
29	B	532935.09	190097.87	5.00	148.00	0.00	0.00	0.00			

Horizontal Illuminance (lux)

Grid 1

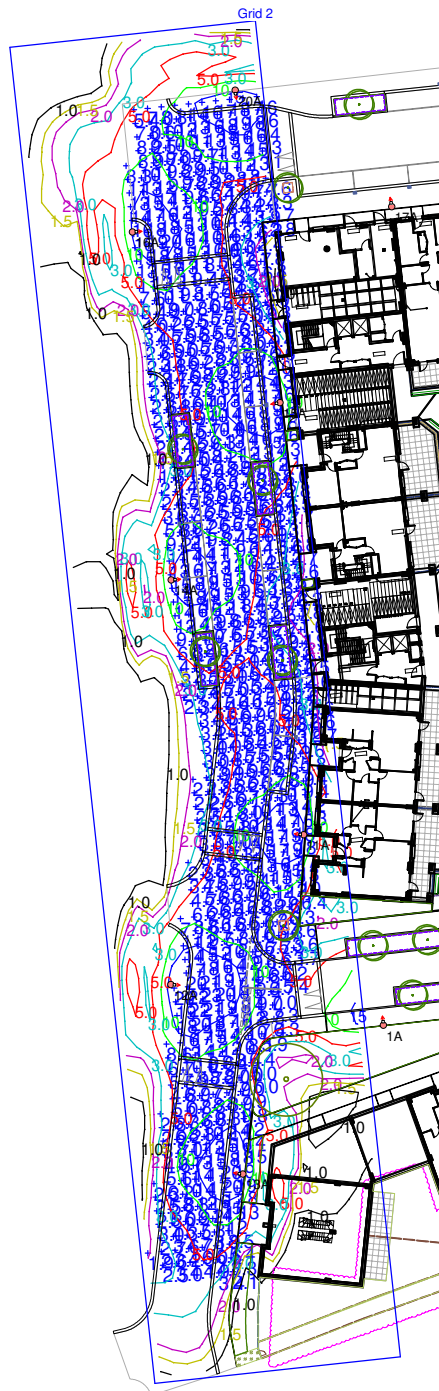


Results

Eav	10.23
Emin	2.04
Emax	22.93
Emin/Emax	0.09
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 2

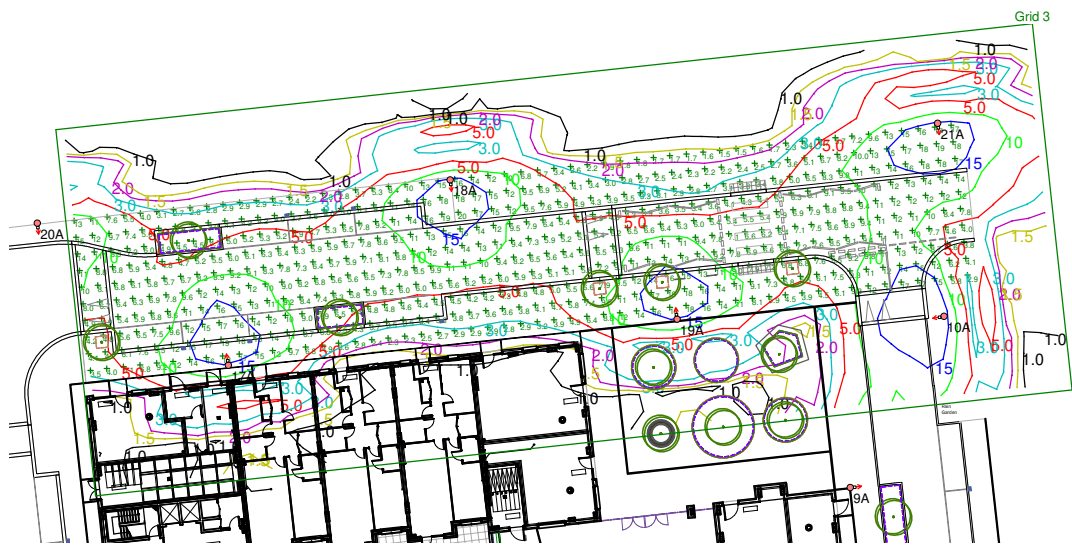


Results

Eav	8.62
Emin	1.65
E _{max}	22.79
E _{min} /E _{max}	0.07
E _{min} /E _{av}	0.19

Horizontal Illuminance (lux)

Grid 3



Results

Eav	8.10
Emin	1.54
Emax	19.65
Emin/Emax	0.08
Emin/Eav	0.19

Horizontal Illuminance (lux)

Grid 4 - Court Yard



Results

Eav	5.30
Emin	1.22
Emax	11.04
Emin/Emax	0.11
Emin/Eav	0.23