



Planning Updates - Condition 16

ECMWF-BDP-ZZ-ZZ-RP-Z-000516

Revision - P02

17.10.24

REVISIONS

BDP Document No. ECMWF-BDP-ZZ-ZZ-RP-Z-000516

Name	Revision:	Issued by:	Checked by:	Date issued:	Notes:
Planning Condition 16	P01	SS	FL	05.07.2024	
	P02	SS	FL	17.10.2024	

Lighting strategy

This technical note has been produced in response to Condition 16 which states:

Prior to commencement of any works for the installation of the lighting (including any infrastructure or servicing to supply them) a lighting strategy shall be submitted for approval to the Local Planning Authority. This shall take into account a design strategy for biodiversity for the site and the strategy shall:

a) Identify those areas/features that are particularly sensitive for bats and that are likely to cause disturbance; and

b) Show how and where external lighting will be installed (through provision of appropriate lighting contour plans and technical specifications) so that it can be clearly demonstrated that areas to be lit will not disturb or prevent the above species having access to their breeding sites and resting places.

All external lighting shall be installed in accordance with the specification and locations set out in the strategy and these shall be maintained thereafter in accordance with the strategy. Under no circumstances should any other external lighting be installed without prior consent from the Local Planning Authority.

Reason: To ensure compliance with policy TB23 and protect species of principal importance.

The proposed ECMWF HQ site was subject to a suite of ecological surveys in 2022 (RPS, 2023) including dusk emergence bat surveys of the existing buildings within the site. During the surveys low numbers of common pipistrelle and noctule bats were recorded foraging within or close to the site. The RPS report concluded that the site has very low value as bat foraging habitat and given the low numbers of recorded passes during the emergence/re-entry surveys, the site is not of significant importance to the foraging nature of bats.

Notwithstanding this, the eastern boundary of the site adjoins a service road and beyond that a block of deciduous woodland which runs the length of the site. Although there is existing lighting columns along the service road the deciduous woodland block will provide connectivity for bats and other wildlife to move across the wider university Estate.

Due to the proposed redevelopment of the existing Eastern Access Road, the Main Contractor (MACE) in consultation with the University of Reading have instructed BDP Lighting to provide a new road lighting scheme, which we have subsequently designed and provided. As the road does not sit within the specific ECMWF project boundary, it is therefore fed (powered) and controlled via a UoR feeder pillar at the Northern end of the road. We have been notified by MACE that control of the luminaires will be via remote daylight photocell and astronomical time-clock.

To minimise the impact to the surrounding environment and nocturnal fauna, the following parameters have been considered and implemented.

After review and careful consideration of the type of road, including its proposed use and given location, the proposed classification of the road has been based upon the following: E3 Environmental Zone. BS 5489-1:2020 & BS EN 13201-2:2015. P4 Lighting Class (5 Lux Ave. As per Table 3 BS EN 13201-2:2015) for subsidiary roads with mainly slow moving traffic. Traffic flow Normal/Quiet & Speed limit <30mph (As per Table A.5 BS 5489-1:2020).

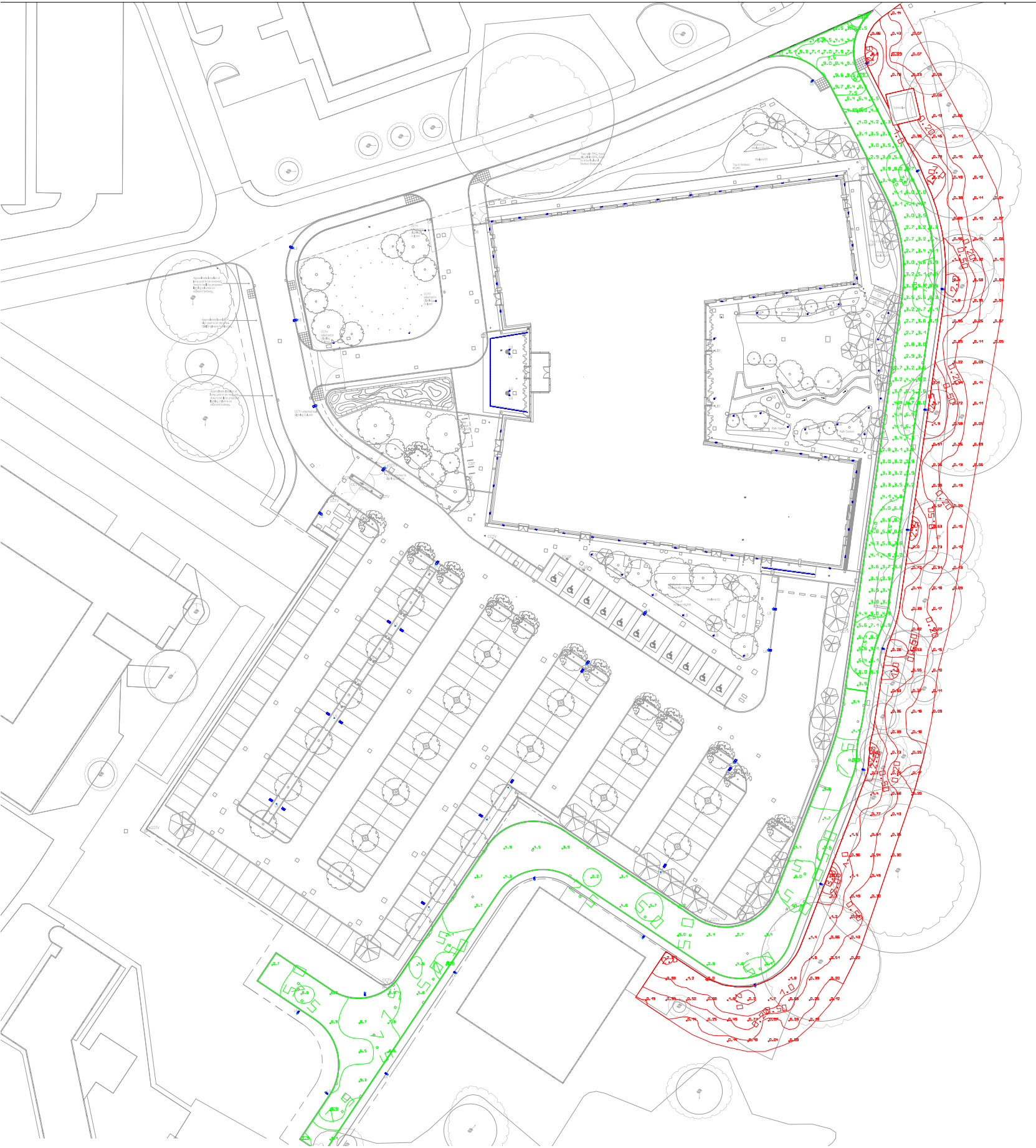
The proposed luminaire type chosen to illuminate the road is LED and has very narrow and controlled street lighting optics, which in conjunction with the proposed 6m columns, allows for approximately 22m centres, this reduces the required number of columns and luminaires, reducing energy consumption, initial and ongoing running costs and carbon footprint.

The luminaires are ‘Dark Sky’ approved and as such have no upward light glow. Due to the very controlled optics, the luminaires can also be tilted upwards to a maximum of 10 degrees, without impacting at all the Dark Sky rating. This has currently been proposed and carried for all column mounted luminaires adjacent to and facing away from the woodland towards the road, and subsequently further reduces any back spill illumination from the luminaires towards the woodland.

In addition to the lighting control via the UoR astronomical time-clock the integral control gear of the proposed luminaires, have the function and ability to be pre-programmed and controlled further by step dimming. As standard the luminaires can dim to 70% of their output 2 hours before midnight and then switch off at sunrise (or just before). There is the ability to have an additional stepped dimming change, but these would need to be defined and agreed by the UoR.

The colour temperature of these proposed luminaires will be a very warm 2200K, so at the red end of the white light colour spectrum (as defined within ILP Bats and Artificial Lighting at Night, GN08/23) and with minimal blue light typically generated by cooler LED colour temperatures.

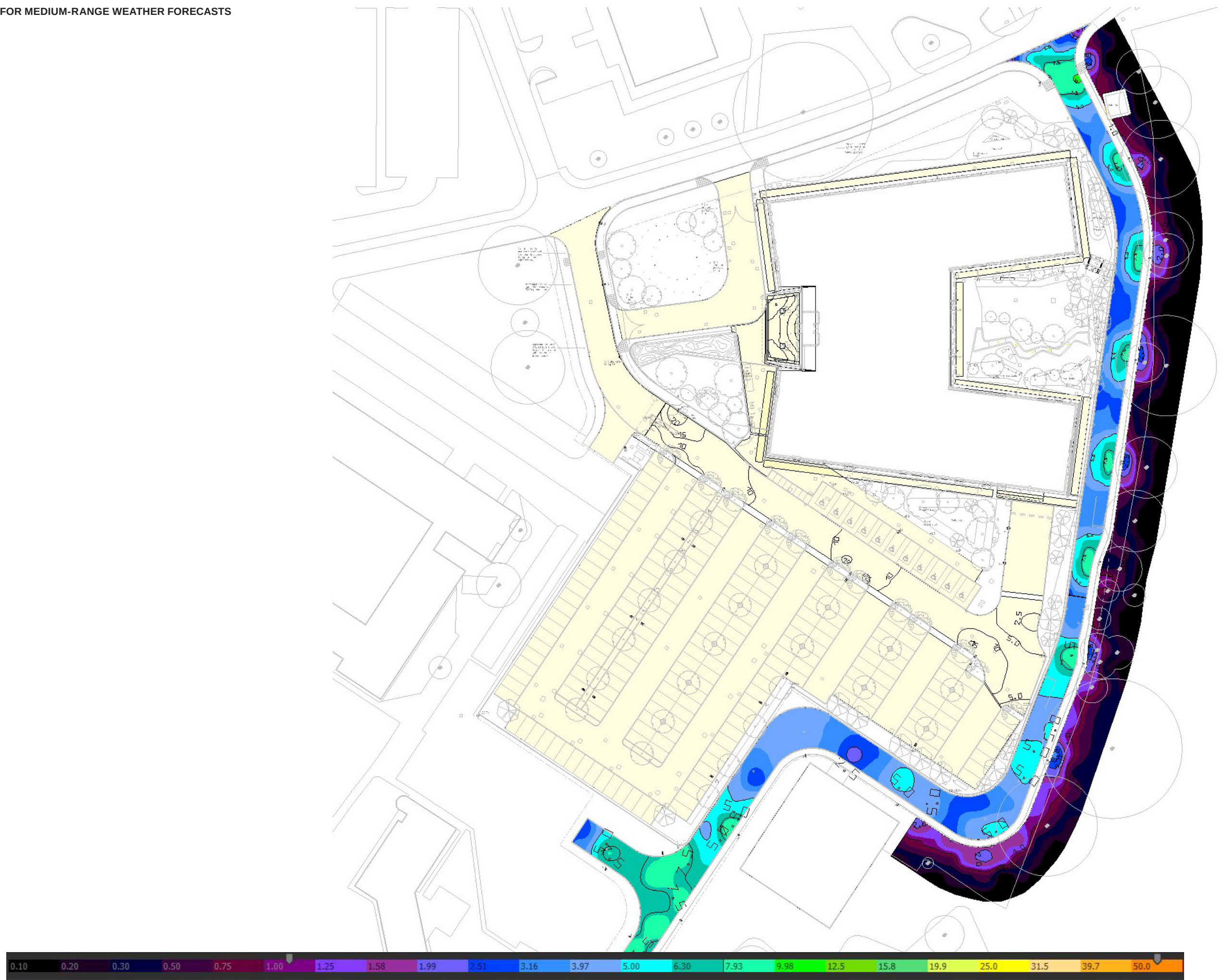
Lighting strategy



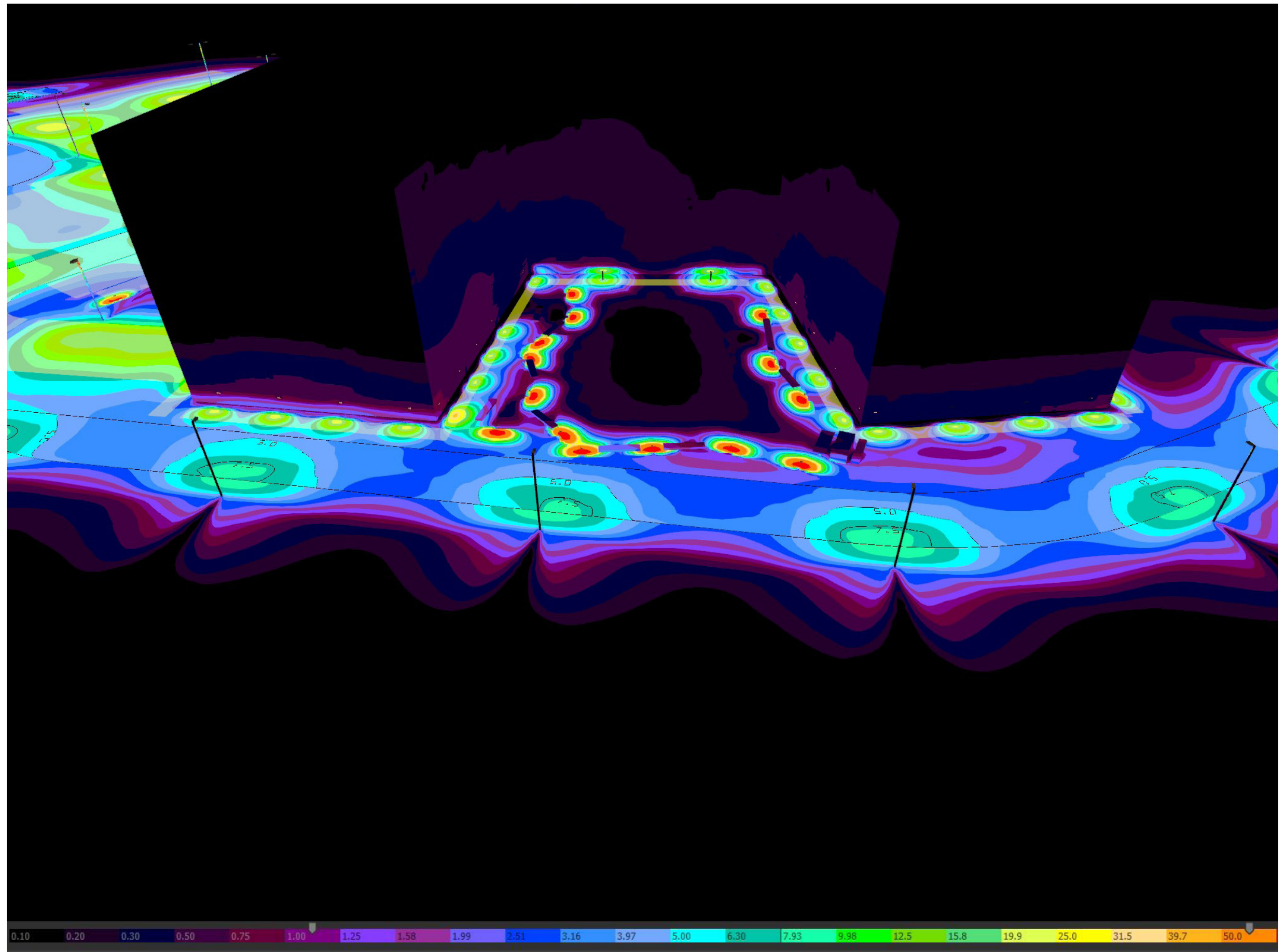
Luminaire list (Site 1)								
Index	Manufacturer	Article name	Item number	Fitting	Luminous flux	Maintenance factor	Connected load	Quantity
1	Kuuzel	Luminaire: Pole-mounted system – Warm White – A65 optic – 99.1W 9930lm – 3000K	EH32_B16J	1x LED / 92W	9930 lm	0.79	99.1 W	14
2	Kuuzel	Luminaire: Pole-mounted system – Warm White – S71 optic – 35.9W 3550lm – 3000K	EH22_B06J	1x LED / 31W	3550 lm	0.79	35.9 W	9
3	SELUX	Line	TLL1C10300	1x LED	1900 lm	0.79	27 W	4
4	Lines Light Group	Series_RX DALI Up-Light 13W DC	80610K35	1x LED-CNA015-BC	1144 lm	0.58	15 W	4
5	BEGA	Recessed luminaire	3305BK3	1x LED 12.0 W	1321 lm	0.79	15 W	51
6	BEGA	8475OK3		1x LED 5,8W	657 lm	0.79	7 W	20
7	Archilope	Optiline AO-TB-100-10-66-830	N/A	1x	436 lm	0.65	2.9 W	118
8	Kuuzel	Street: Pole-mounted system – S71 optic – Warm White – integrated DALI – Ø 42-76mm – 23.48 3150lm – 3000K – Adapter required for installation on pole – To be ordered together with optic assembly – from Ø42 to Ø60mm	N400_030R	1x LED / 20W	1260 lm	0.79	9.4 W	15
9	Kuuzel	Street: Pole-mounted system – S71,5 optic – Warm White – integrated DALI – Ø 42-76mm – 23.48 3150lm – 3000K – Adapter required for installation on pole – To be ordered together with optic assembly – from Ø42 to Ø60mm	N406_030R	1x LED / 20W	1204 lm	0.79	9.4 W	2
10	BEGA	Bollard head + Bollard tube with emergency lighting single battery (84002) – bollards	8469OK3	1x	225 lm	0.79	10 W	2

#	Name	Parameter	Min	Max	Average	Min/average	Min/max
5	Eastern Access Road – North	Perpendicular Illuminance	1.01 lx	10.6 lx	4.90 lx	0.21	0.295
6	Eastern Access Road – South	Perpendicular Illuminance	2.09 lx	9.38 lx	5.26 lx	0.40	0.22
15	Woodland Light Spill	Perpendicular Illuminance	0.009 lx	3.14 lx	0.60 lx	0.015	0.003

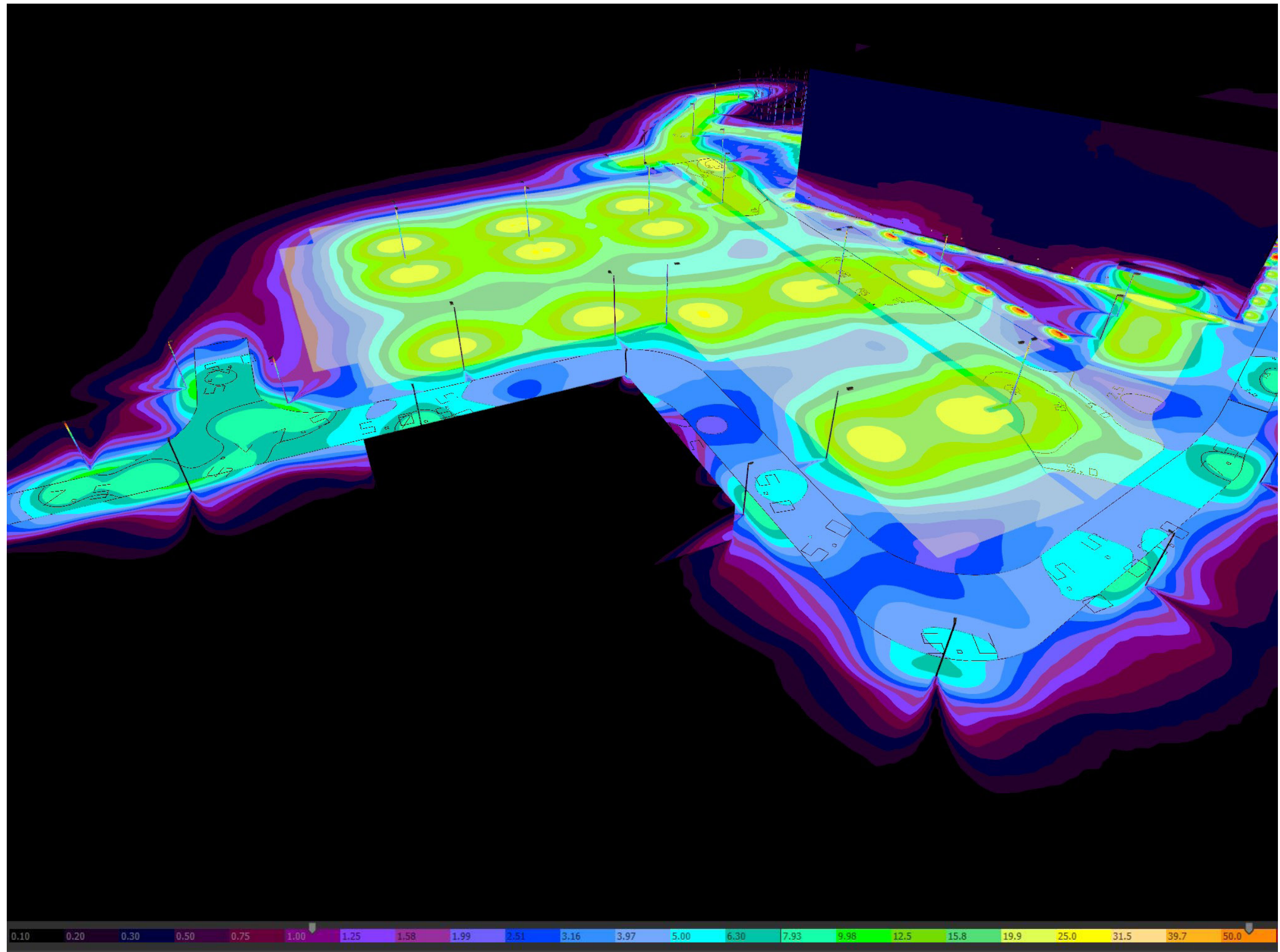
X12			Footcandle Length (m) Width (m) Height (m) Diameter (m) Process depth (m) Finish R rating Weight (kg)	Luminaire Description Pole-mounted urban lighting system with a cable street arm, Ø48, 3015mm, Height 10m. DALI DMX control gear. Mounted to the pole-mounted column. To be connected to a standard automatic of streetlights. DALI control gear and power consumption to be indicated to R01 of original design. NB: Final control specifications to be determined and confirmed by University of Reading facilities management. Location/Mounting Description To be supplied with 90° pole-mounted pole-mounted column. 3015mm diameter pole. 3.0m diameter base. Column to be mounted with appropriate PVC sleeve, to be specified by customer. Mounted along the eastern access road. As indicated on Stage 1 lighting design. Main contractor to confirm all required accessories with manufacturer, prior to ordering installation.	Manufacturer / Supplier Gussner Contact Details Terence Gussner www.gussner.co.uk	Luminaire Range Street Catalogue No. N400 0300 a 1907's 5.76W Accessories LDR113	Light source type (No. V) LED Lamp beam (if applicable) No. of Lamp/LEDs Lumen per Lamp/LED	LED - 1 1 100 (L)		Control Protocol 160000 Power DALI DMX
X13			Footcandle Length (m) Width (m) Height (m) Diameter (m) Process depth (m) Finish R rating Weight (kg)	Luminaire Description Pole-mounted urban lighting system with a cable street arm, Ø48, 3015mm, Height 10m. DALI DMX control gear. Mounted to the pole-mounted column. To be connected to a standard automatic of streetlights. DALI control gear and power consumption to be indicated to R01 of original design. NB: Final control specifications to be determined and confirmed by University of Reading facilities management. Location/Mounting Description To be supplied with 90° pole-mounted pole-mounted column. 3015mm diameter pole. 3.0m diameter base. Column to be mounted with appropriate PVC sleeve, to be specified by customer. Mounted along the eastern access road. As indicated on Stage 1 lighting design. Main contractor to confirm all required accessories with manufacturer, prior to ordering installation.	Manufacturer / Supplier Gussner Contact Details Terence Gussner www.gussner.co.uk	Luminaire Range Street Catalogue No. N400 0300 a 1907's 5.76W Accessories LDR113	Light source type (No. V) LED Lamp beam (if applicable) No. of Lamp/LEDs Lumen per Lamp/LED	LED - 1 1 100 (L)		Control Protocol 160000 Power DALI DMX



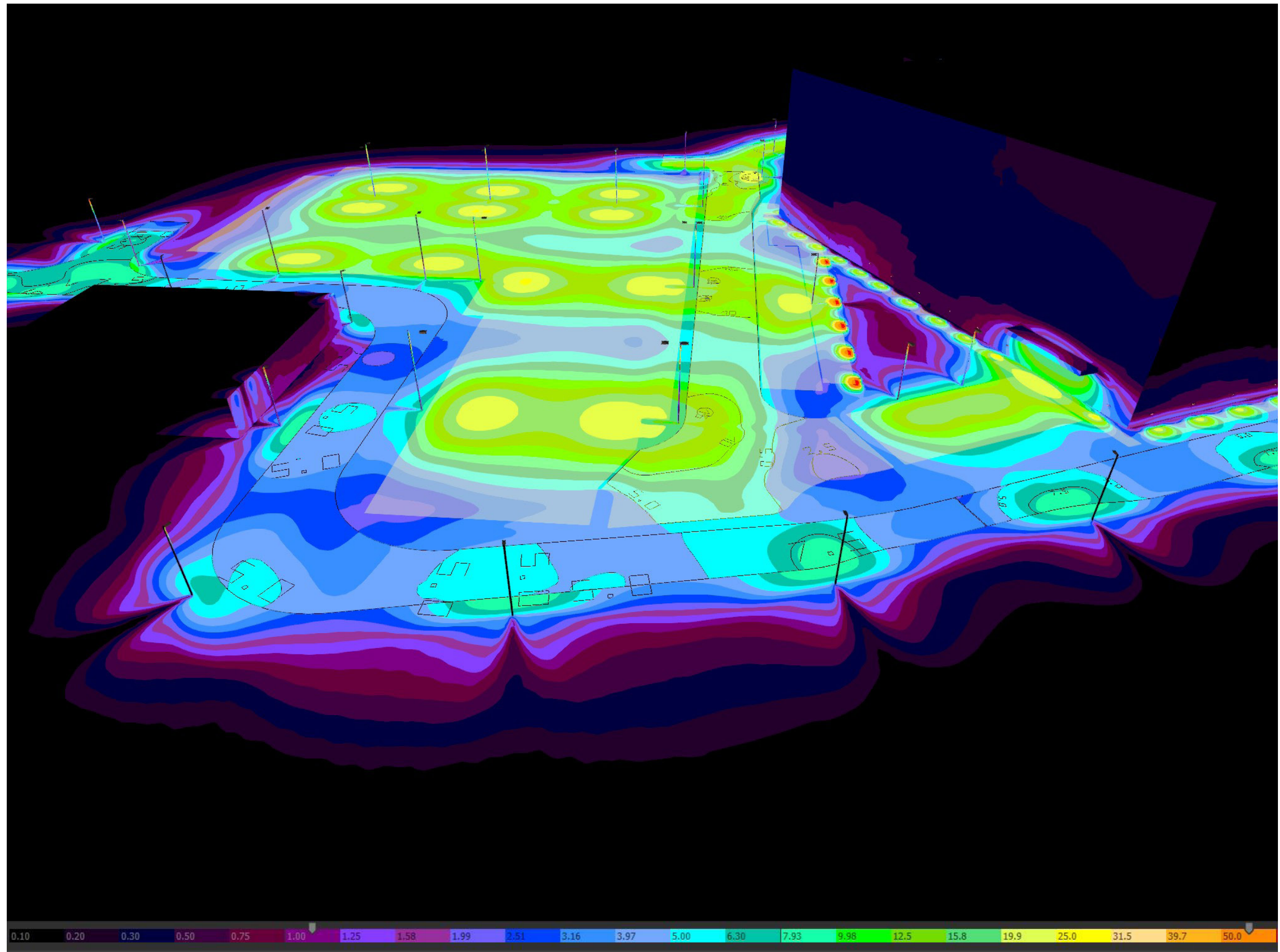
Exterior Lux level (Eastern elevation) facing wilderness



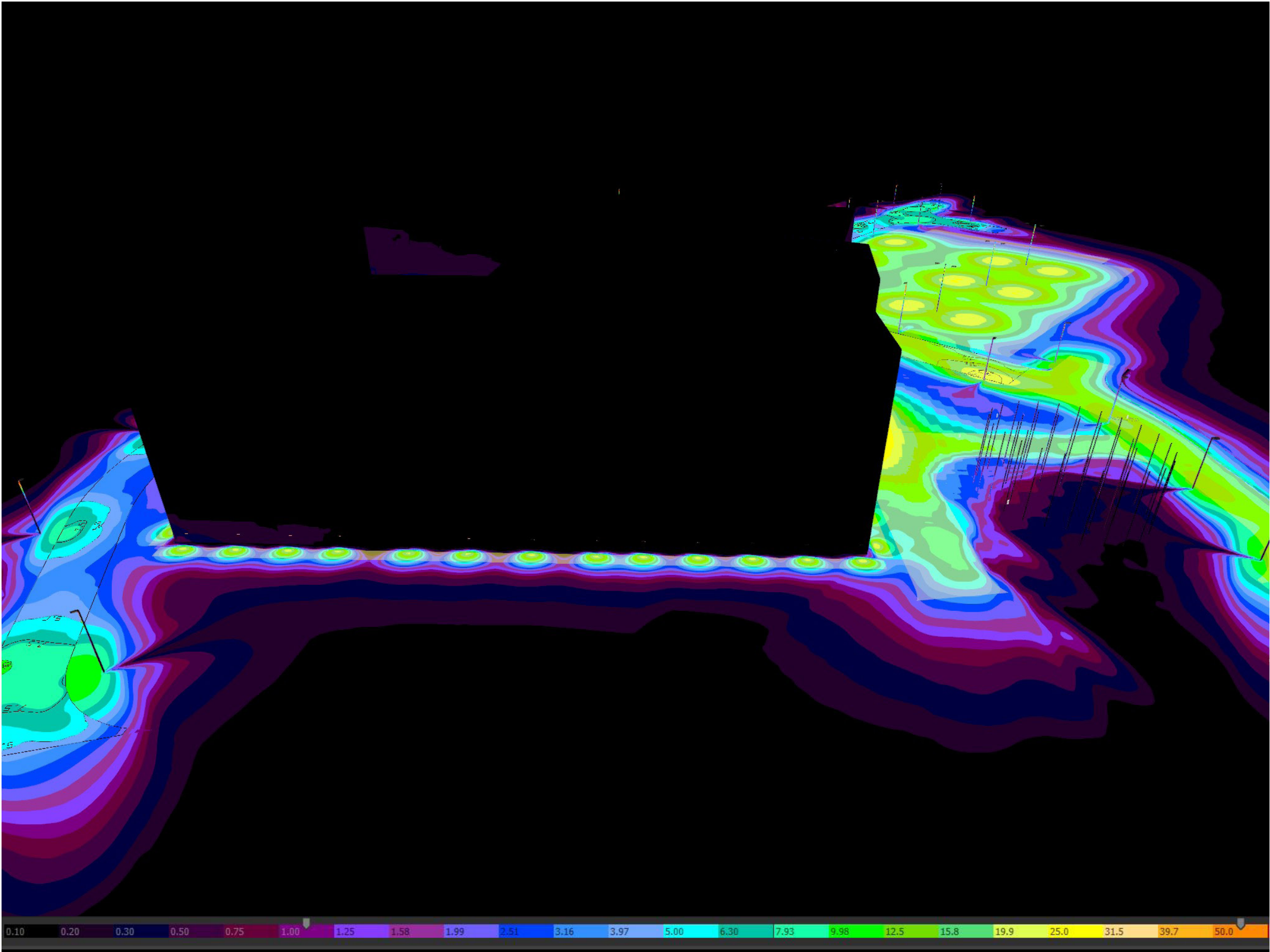
Exterior Lux level Parking



Exterior Lux level Parking



Exterior Lux level Northern Elevation



Exterior Lux level Western Elevation

