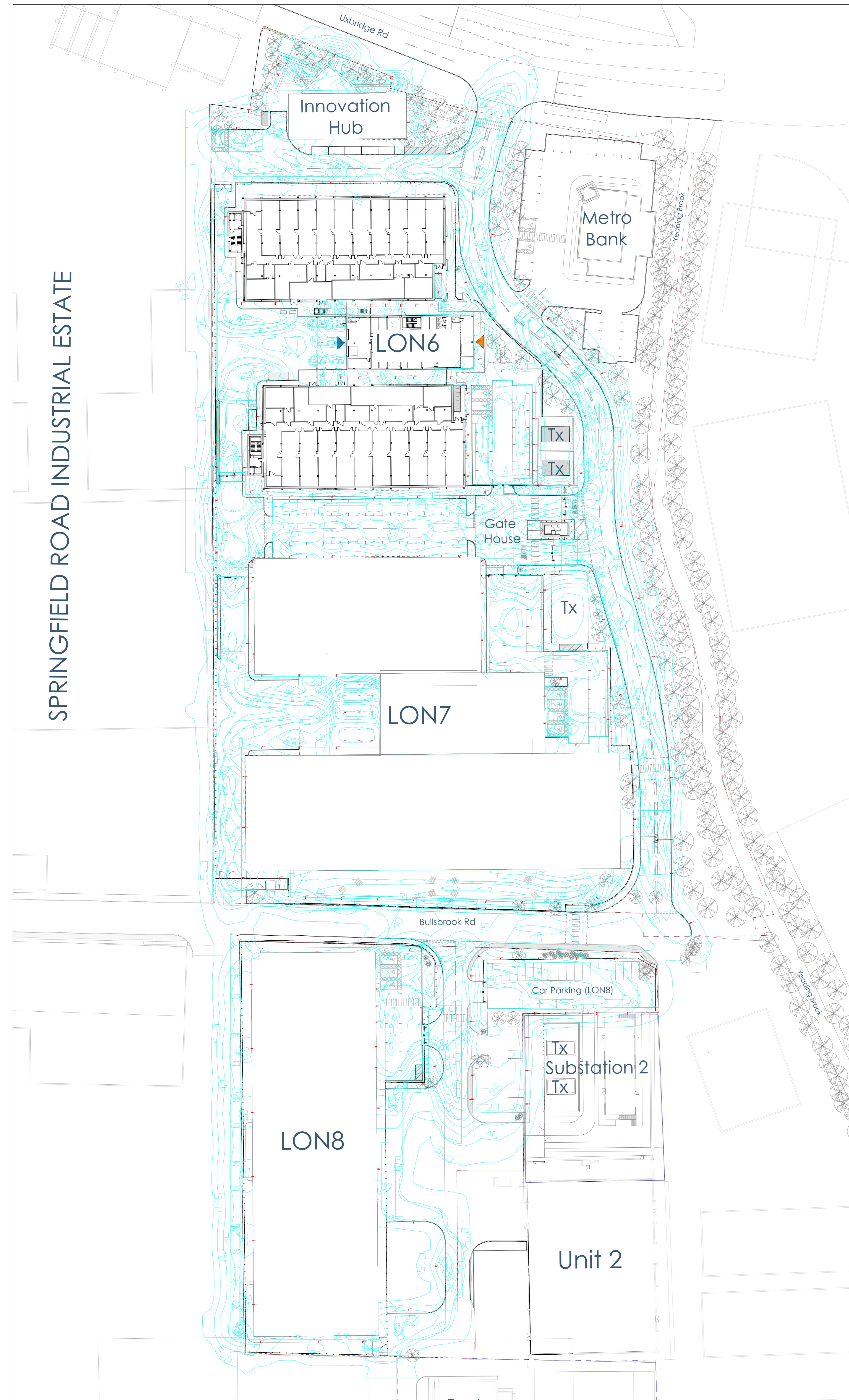


SPRINGFIELD ROAD INDUSTRIAL ESTATE



LIGHTING DESIGN NOTES:
 - THE EXTERNAL LIGHTING SCHEME IS BASED ON THE SPECIFIC CLIENT REQUIREMENTS FOR THE DATA CENTRES.
 - THE EXTERNAL LIGHTING DESIGN HAS BEEN ASSESSED AGAINST ENVIRONMENTAL ZONE E3, WHICH IS DESCRIBED AS MEDIUM DISTRICT, WHICH APPLIES TO RURAL, SUBURBAN AND URBAN SETTLEMENTS, SMALL TOWN CENTERS, OR SUBURBAN LOCATIONS. THIS INFORMATION IS INDICATED IN TABLE 2 DESIGN GUIDANCE IN THE ILP GUIDANCE NOTES FOR THE REDUCTION OF OBTRUSIVE LIGHT GN01/2021.

AS PER THE ABOVE, THE FOLLOWING STANDARDS MUST BE MET:

- UPWARDS LIGHT RATIO (ULR) < 5%.
- ILLUMINANCE IN THE VERTICAL PLANE (LUX)>10 (PRE-CURFEW), 2 (POST-CURFEW), NO CURFEW HOURS ON THIS PROJECT DUE TO NATURE OF THE PROJECT.
- MAXIMUM LUMINOUS INTENSITY EMITTED BY LUMINAIRES (CD) (PRE-CURFEW), 1,000 (POST-CURFEW), NO CURFEW HOURS ON THIS PROJECT DUE TO NATURE OF THE PROJECT.
- BUILDING LUMINANCE (CD/m²) < 5.

THE ILLUMINANCE IN THE VERTICAL PLANE POSITIONS HAVE BEEN LOCATED WITHIN THE SITE WHERE EXISTING TREES ARE FEATURED.

ACCORDING TO THE ECOLOGICAL ASSESSMENT REPORT CONDUCTED BY THE LIGHT POLLUTION CONSULTANT THERE ARE NO IDENTIFIED SENSITIVE RECEPTORS OR ECOLOGICAL CONCERN RELATED TO LIGHT SPILLS.

THE MAINTENANCE FACTOR OF THE ISOLINES LUX PLOT HAS BEEN SET TO 1.0 AS PER THE DAY ONE INSTALLATION.

THE LIGHTING INSTALLATION SHALL BE CAREFULLY CONSIDERED TO ENSURE PROVISION OF APPROPRIATE PHYSICAL AND SPECTRAL PROPERTIES AS FOLLOWS:

- NEUTRAL COLOR TEMPERATURE 4000K.
- MINIMIZE THE SPREAD OF LIGHT ABOVE THE HORIZONTAL.
- USE NARROW SPECTRUM LIGHT SOURCES.
- LUMINAIRES ON THE SITE TO FACE INWARDS TO THE SITE TO REDUCE SPILL INTO THE SURROUNDING AREA.
- UTILIZE LED LIGHTING ONLY TO CONTROL THE LIGHT AND MINIMIZE UNWANTED LIGHT SPILL.

THE DESIGN COMPLIES WITH THE ILP GUIDANCE NOTES ON THE REDUCTION OF OBTRUSIVE LIGHT.

ALL ILLUMINANCE REQUIREMENTS MENTIONED ABOVE ARE MET. ADDITIONAL LUMINAIRES TO BE ADDED ON THE MECHANICAL AND ELECTRICAL EQUIPMENT IF NEEDED TO PROVIDE LOCAL ILLUMINANCE.

LIGHTING CONTROLS:
 ALL LUMINAIRES WILL BE CONTROLLED VIA ASTROLOGICAL TIMECLOCK WITH DUSK TILL DAWN PHOTOCELL. SEE EACH LUMINAIRE IN THE LIGHTING LEGEND FOR SPECIFICS.
 LIGHTING MUST NOT BE ON THE SWITCHED CIRCUIT.
 PIR SENSORS TO BE PLACED IN LOADING BAYS AND PARKING AREAS TO SWITCH LUMINAIRES ON OR OFF IN LINE WITH TIME CLOCK OPERATION.

LIGHTING STANDARDS:
 THE EXTERNAL LIGHTING DESIGN HAS BEEN ASSESSED AGAINST THE FOLLOWING DESIGN STANDARDS:

- ILP (INSTITUTION OF LIGHTING PROFESSIONALS) GUIDANCE NOTES FOR THE REDUCTION OF OBTRUSIVE LIGHT GN01/2021.
- BS 5489-1:2020 DESIGN OF ROAD LIGHTING.
- CIE 115:2010 LIGHTING OF ROADS FOR MOTOR AND PEDESTRIAN TRAFFIC.
- BS EN 12464-2:2014 LIGHT AND LIGHTING — OUTDOOR WORK PLACES.

DESIGN PARAMETERS:

DESIGN PARAMETERS ARE BASED ON THE CLIENT REQUIREMENT AS BELOW:

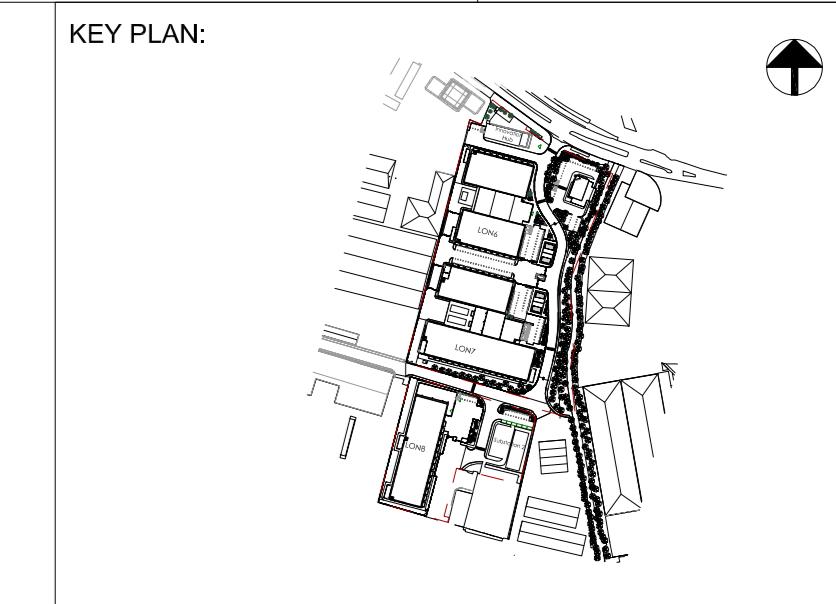
- EXTERIOR LIGHTING DURING THE HOURS OF DARKNESS WILL BE AN AVERAGE MINIMUM OF 10 LUMENS PER SQUARE METER (LUX) IN USABLE AREAS EXCEPT THE SPECIFIC AREAS NOTED IN THIS SECTION.

- EXTERIOR WALKWAYS SHALL BE ILLUMINATED TO 30 LUX.
- LOADING DOCKS SHALL BE ILLUMINATED TO 50 LUX WHEN IN USE AND 30 LUX WHEN NOT IN USE
- VEHICULAR ENTRY AND EXIT POINTS SHALL BE ILLUMINATED TO 30 LUX.
- PARKING LOTS (CAR PARKS) SHALL BE ILLUMINATED TO 20 LUX.
- EQUIPMENT YARD ENTRY AND EXIT POINTS SHALL BE ILLUMINATED TO 30 LUX.

SUMMARY

THE DESIGN COMPLIES WITH THE ILP GUIDANCE NOTES ON THE REDUCTION OF OBTRUSIVE LIGHT.

ALL ILLUMINANCE REQUIREMENTS MENTIONED ABOVE ARE MET. ADDITIONAL LUMINAIRES TO BE ADDED ON THE MECHANICAL AND ELECTRICAL EQUIPMENT IF NEEDED TO PROVIDE LOCAL ILLUMINANCE.



GENERAL NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELATED ARCHITECTURAL, STRUCTURAL AND ENGINEERING SERVICES DRAWINGS, SPECIFICATIONS, SCHEDULES AND PIANOS.
2. ALL PLANT AND EQUIPMENT IS TO BE INSTALLED TO MANUFACTURER'S RECOMMENDATIONS, ALLOWING FULL ACCESS FOR COMMISSIONING, MAINTENANCE AND REPAIRS AS REQUIRED.
3. ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED.
4. DO NOT SCALE FROM THIS DRAWING.
5. SET OUT ALL LUMINAIRES AS PER THE ARCHITECT'S AND LANDSCAPE ARCHITECT'S DETAILED DRAWINGS.

SYSTEM DESCRIPTION

6. CHECK THE LIGHTING INSTALLATION CO-ORDINATION AND POSITIONS WITH THE ARCHITECT'S DESIGN DETAILS. CHECK THE CO-ORDINATION OF ANY MEP SERVICES, SUCH AS FIRE ALARM, SECURITY DEVICES ETC. WITH THE LIGHTING DESIGN AND ANY OTHER ENGINEERING SERVICES SUCH AS DUCTING ETC.
7. REFER TO MANUFACTURERS INSTALLATION GUIDES TO ENSURE CORRECT INSTALLATION METHOD FOR EACH TYPE OF LUMINAIRE.
8. ALL LUMINAIRES ARE TO BE LED.
9. INCLUDE ALL ANCILLARY EQUIPMENT SUCH AS DRIVERS, FLOOR BOXES, MOUNTING BRACKETS, OUTER CASINGS, COVERS, FILTERS, CABLES, AND CONNECTORS ETC.
10. ALL LUMINAIRES ARE TO BE LEFT IN A CLEAN CONDITION ON COMPLETION AND CARE SHALL BE TAKEN TO ENSURE ALL GLASS COVERS, FILTERS ETC ARE DUST FREE.

ILP GUIDANCE NOTES ON THE REDUCTION OF OBTRUSIVE LIGHT

| | UPWARDS LIGHT RATIO (ULR) [MAX %] | ILLUMINANCE IN THE VERTICAL PLANE [LUX] (E _v) | | MAXIMUM LUMINOUS INTENSITY EMITTED BY LUMINAIRES [CD] (I in cd) | BUILDING LUMINANCE PRE CURFEW | PASS OR FAIL |
|--------------------------------|-----------------------------------|---|-------------|---|-------------------------------|--------------|
| | | PRE CURFEW | POST CURFEW | | | |
| ENVIRONMENTAL ZONE E3 | 5 | 10 | 2 | 10,000 | 1,000 | 10 TARGET |
| ULR | 0.00 | | | | | PASS |
| NO SENSITIVE RECEPTOR DETECTED | | 0.00 | 0.00 | | | PASS |

Luminaire list (COLT MASTERPLAN)

| Index | Manufacturer | Article name | Item number | Fitting | Luminous flux | Maintenance factor | Connected load | Mounting | Image |
|-------|--------------|--------------|---|---------------------------------|---------------|--------------------|----------------|-----------------|-------|
| EXP1 | TRILUX | Jovis50 | Jovis50-AE2L4L-A3-2600-CA-E-26 (CLO initial value) ET | 1x LED | 3200 lm | 0.80 | 26 W | Lighting Column | |
| EXP2 | TRILUX | Jovis50 | Jovis50-AE2L6S-2-66-740-ET-CA-B-26 (CLO end value) ET | 1x LED | 6800 lm | 0.80 | 62 W | Lighting Column | |
| EXL1 | Current | Pursuit Down | RN-D-2-10-4K8-WW-CL | 1x 757GRT-V1 DIRECT (DOWN) ONLY | 2198 lm | 0.80 | 26 W | Ceiling Mounted | |
| EXW1 | TRILUX | LnPlus | LnPlus 40-AM10-16000 740-12G1 ETDD (CLO end value) ETDD | 1x LED | 18000 lm | 0.80 | 142 W | Wall Mounted | |

| | |
|---|--|
| <input checked="" type="checkbox"/> Checked | <input checked="" type="checkbox"/> Verified |
| 01 14/03/25 | FOR PLANNING |
| 00 21/02/25 | DRAFT PLANNING ISSUE |
| REV. DATE | DESCRIPTION |
| | CHECKED VERIFIED |

REVISIONS

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PROJECT NAME: HDP Masterplan - LON8
 DRAWING TITLE: MASTERPLAN EXTERNAL LIGHTING DESIGN
 STATUS: FOR PLANNING

DESIGNED: DRAWN: CHECKED: SCALE: STATUS:
 CDL MB OI 1:500 A0 P01
 DRAWING NUMBER: LONUX-CDL-ZZ-XX-RP-E-00001
 REVISION: P01