

Doc. Ref.	24154-02-LSPEC-02
Sheet	1 of 7
Engineer	Nathan Allen
Date	10.03.2021
Revision	A

DESIGN CALCULATIONS FRONT SHEET

SCHEME	Land off Longcliff Hill, Old Dalby
CLIENT	Truman Contractors
ASPECTS OF SCHEME TO BE DESIGNED	Private Street lighting Plot 1-8
CODES OF PRACTICE, DESIGN SPECIFICATIONS & BRITISH STANDARDS	BS 5489-1:2020 & BS EN 13201-2:2015
NOTES	<ul style="list-style-type: none"> • Lighting to class P5 (Eav 2.05 to 3.08 Lux, Emin 0.41 Lux) • TRT Lighting VIA Bollard 1.13m • Street lighting layout shown on engineering drawing ref. 24154_02_100_02 Use Lighting Reality design software

INDEX

Pages	Calculations	Checked by	Date
2-5	P5 Lighting reality design private Lighting Plots 1	DMH	10.03.2021
6-7	Designer risk assessment	DMH	09.03.2021

DATE: 9 March 2021
DESIGNER: Nathan Allen
PROJECT No: 24154
PROJECT NAME: Land off Longcliff Hill, Old Dalby

M·EC

Private Lighting Design

SCHEME DESIGNED IN ACCORDANCE WITH BS5489-1:2020 &
BS EN 13201-2:2015

Lighting Class - P5 (using S/P ratio of 1.50)
E_{av} = 2.05 lx - 3.05 lx
E_{min} = 0.41 lx

Outdoor Lighting Report

Layout Report

General Data

Dimensions in Metres Angles in Degrees
Grid Origin 467311.5m x 324021.4m
Area 85.1m x 74.7m
Sample Spacing 1.49m x 1.49m

Luminaires



Luminaire A Data

Supplier	Urbis Schreder
Type	AMPERA MINI 5141 Flat glass 16 OSLO SQUARE GIANT@700mA NW
Lamp(s)	16 OSLO SQUARE GIANT@700mA NW 740 230V
LampFlux(klm)/Colour	4.46 NW 4000K/70
File Name	AMPERA MINI 5141 16 OSLO SQUARE GIANT 700mA NW 740 36.1W 404642 Flat...
Maintenance Factor	0.75
Imax70,80,90(cd/klm)	595.3, 66.0, 0.0
Lamp S/P Ratio	1.53
No. in Project	1



Luminaire B Data

Supplier	Urbis Schreder
Type	AMPERA MINI 5119 Flat glass 16 OSLO SQUARE GIANT@700mA NW
Lamp(s)	16 OSLO SQUARE GIANT@700mA NW 740 230V
LampFlux(klm)/Colour	4.31 NW 4000K/70
File Name	AMPERA MINI 5119 16 OSLO SQUARE GIANT 700mA NW 740 36.1W 404562 Flat...
Maintenance Factor	0.75
Imax70,80,90(cd/klm)	642.0, 24.5, 0.0
Lamp S/P Ratio	1.53
No. in Project	1



Luminaire C Data

Supplier	TRT Lighting
Type	VIA ASY 160mA 4000K LED 240 deg BS
Lamp(s)	42 0005 0000 100
Lamp Flux (klm)	0.16
File Name	VIA_ASY_160mA_162LM_4K_240°BS.ies
Maintenance Factor	0.75
Imax70,80,90(cd/klm)	974.0, 590.9, 123.8
Lamp S/P Ratio	1.57
No. in Project	7

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Dimmed to	Target X	Target Y	Target Z
1	C	467385.60	324057.45	1.13	222.00	0.00	0.00	0.00	100%			
2	C	467377.88	324056.95	1.13	42.00	0.00	0.00	0.00	100%			
3	C	467349.18	324047.12	1.13	191.00	0.00	0.00	0.00	100%			
4	C	467346.25	324037.35	1.13	44.00	0.00	0.00	0.00	100%			
5	C	467378.72	324064.28	1.13	231.00	0.00	0.00	0.00	100%			
6	C	467350.14	324032.66	1.13	43.00	0.00	0.00	0.00	100%			
7	C	467358.67	324031.05	1.13	143.00	0.00	0.00	0.00	100%			
8	A	467334.54	324046.61	6.00	116.00	0.00	0.00	0.40	50%			
9	B	467361.36	324073.76	6.00	264.00	0.00	0.00	0.40	50%			

Horizontal Illuminance (lux)

Grid 1

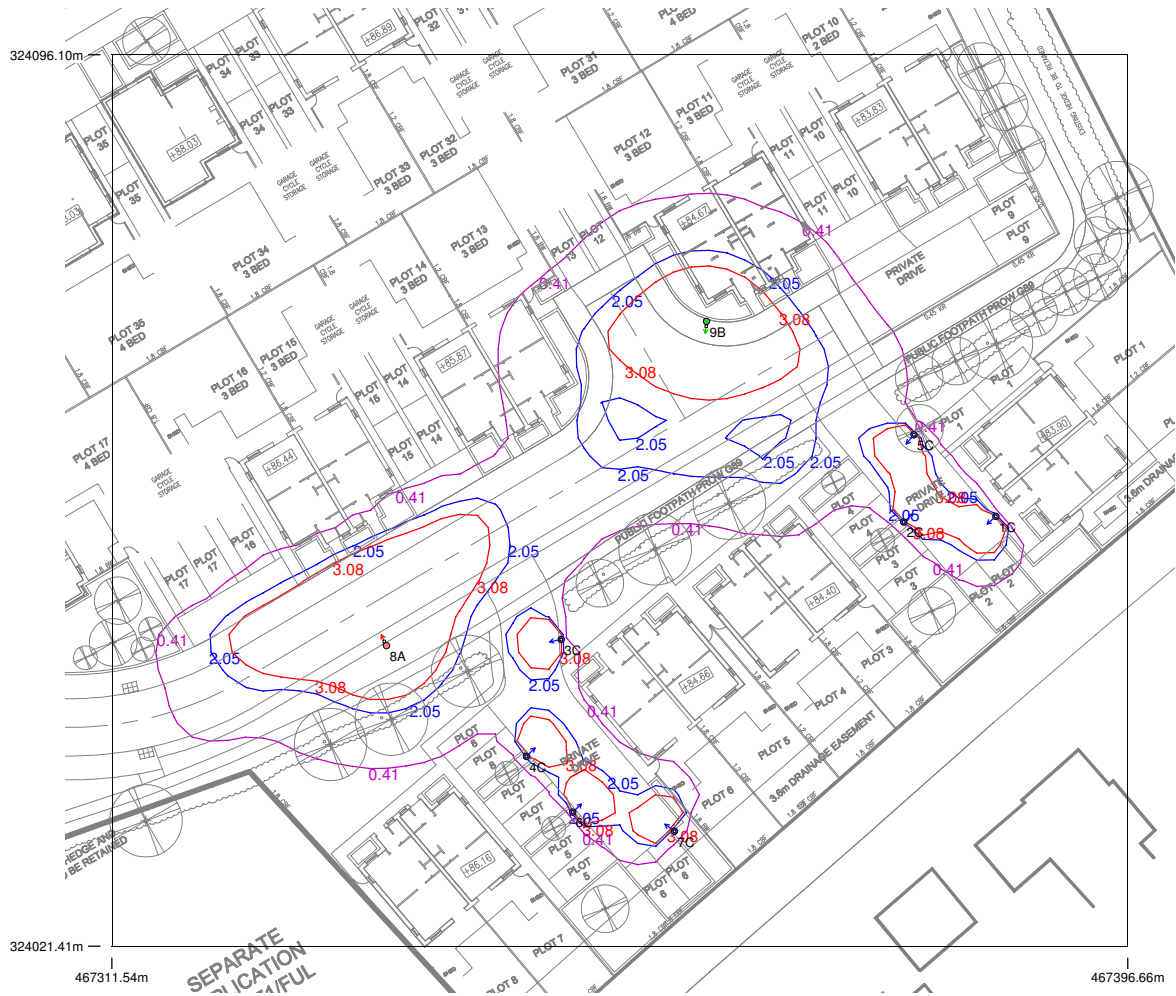


Results

Eav	3.06
Emin	0.63
Emax	9.62
Emin/Emax	0.06
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 1



Results

Eav	3.06
Emin	0.63
Emax	9.62
Emin/Emax	0.06
Emin/Eav	0.20

STREET LIGHTING DESIGN RISK ASSESSMENT

M·E·C

Project	Land off Longcliff Hill, Old Dalby		
Ref.	24154	Client	Truman Contractors
Engineer	Nathan Allen	Date	09.03.2021

Ref. No	Activity/Element	Potential Hazards	Those at Risk	Risk Rating LOW/ MED/ HIGH	Possible Control Options (Contractors)
1.1	Installation and removal of street lighting	Erection and removal of lighting columns and signs	Contractor Visitors Public	MED	Safety zone to be maintained between column erection and other site users/pedestrians. Comply with Well-maintained Highways Code of Practice and all requirements for manual handling of columns, refer to The Manual Handling Operations Regulations 1992. Reflective jackets and safety equipment to be worn at all times. Traffic management to be carried out in accordance with Chapter 8. When removing existing apparatus carry out appropriate safety checks to ensure supply is disconnected. Existing street lighting to be maintained in accordance with appropriate BS EN 13201:2003 (BS 5489) Code of practice or as specified by engineer, during construction process. Maintained minimum 0.5m safety zone from overhead lines at all times. The use of impact tools must be limited. For the installation of raise/lower columns, the contractor should consider the use of a carrying cradle.
1.2	Excavation for the Installation and removal of street lighting	Buried services may exist that have not been identified on the record and survey information resulting in risk of potential electrocution, damage to cables, damage to ducting system and damage to gas mains/water mains.	Site operatives and persons permitted within site. Public	MED	Collate service records from ALL major utility companies with equipment within the vicinity before starting work. All holes to be excavated by hand digging to minimise risks. CT scan to locate buried obstructions. Safety zone to be maintained between other site users / pedestrians. Comply with HSG47 – Avoiding danger from underground services and all requirements for manual handling of equipment (Manual Handling Techniques). Reflective jackets and safety equipment to be worn at all times. Traffic management to be carried out in accordance with Chapter 8. When removing existing apparatus carry out appropriate safety checks to ensure supply is disconnected. The use of impact tools must be limited or appropriate road closure/diversions set up.
1.3	Electrical Installation/Testing	Electrocution	Contractor	MED	All electrical work to be carried out in accordance with the latest BS 7671:2018 18th Edition, The electricity at work regulations, Health and safety at work Act and CDM. Reflective jackets and safety equipment to be worn at all times. Traffic management to be carried out in accordance with Chapter 8. Existing street lighting to be maintained in accordance with appropriate BS EN 13201:2003 (BS 5489) Code of practice or as specified by engineer, during construction process. When removing existing apparatus carry out appropriate safety checks to ensure supply is disconnected.

1.4	COSHH	Dust, Fumes, Vapour, Gas, Skin contact with liquids	Contractor Visitors Public	MED	Design and operate processes and activities to minimise emission, release and spread of substances hazardous to health. Take into account all relevant routes of exposure – inhalation, skin absorption and ingestion – when developing control measures. Control exposure by measures that are proportionate to the health risk. Inform and train all employees on the hazards and risks from substances with which they work and the use of control measures developed to minimise the risks.
1.5	Working at heights	People falling and objects falling	Contractor Visitors Public	MED	Avoid working at heights where it's reasonably practicable to do so. Minimise the distance and consequences of a fall, by using the right type of equipment where the risk cannot be eliminated. Keep loose materials and stacking or storing materials well back from edges. Contractor to comply with work place regulations and also the personal protective equipment at work regulations 1992
1.6	Lifting operations near live carriageway	Objects falling	Contractor Visitors Public	MED	Contractor to provide method statements and detailed risk assessment to cover this operation.
1.7	Removal of DNO fuse carriers	Electrocution	Contractor	MED	Only electricians holding a G39 certificate allowed to perform this task
1.8	Lowering position of mid hinged lighting columns	Obstruction	Public	LOW	Columns to be lowered in line with the footpath or to be installed as per directional arrow shown on the drawing