



SUMMARY OF CALCULATIONS
LIGHTING REALITY CALC. P20478-A-01

Grid 1
Results - Horizontal Illuminance (lux)
Eav= 5.27
Emin= 1.02
Emax= 15.15
Emin/Emax= 0.07
Emin/Eav= 0.19
Emax/Eav= 2.88

Site Entrance
Results - Horizontal Illuminance (lux)
Eav= 5.01
Emin= 1.24
Emax= 14.03
Emin/Emax= 0.09
Emin/Eav= 0.25
Emax/Eav= 2.80

Plots 119-121
Results - Horizontal Illuminance (lux)
Eav= 5.56
Emin= 1.43
Emax= 12.94
Emin/Emax= 0.11
Emin/Eav= 0.26
Emax/Eav= 2.33

Plots 15-18
Results - Horizontal Illuminance (lux)
Eav= 5.10
Emin= 0.96
Emax= 14.34
Emin/Emax= 0.07
Emin/Eav= 0.19
Emax/Eav= 2.81

Plots 1-4
Results - Horizontal Illuminance (lux)
Eav= 6.86
Emin= 1.03
Emax= 13.24
Emin/Emax= 0.08
Emin/Eav= 0.15
Emax/Eav= 1.93

Plots 84-92
Results - Horizontal Illuminance (lux)
Eav= 5.47
Emin= 2.48
Emax= 13.68
Emin/Emax= 0.18
Emin/Eav= 0.45
Emax/Eav= 2.50

Plots 66-71
Results - Horizontal Illuminance (lux)
Eav= 5.28
Emin= 1.20
Emax= 15.34
Emin/Emax= 0.08
Emin/Eav= 0.23
Emax/Eav= 2.90

Plots 41-51
Results - Horizontal Illuminance (lux)
Eav= 4.80
Emin= 1.01
Emax= 12.88
Emin/Emax= 0.08
Emin/Eav= 0.21
Emax/Eav= 2.68

KEY TO ISOLUX CONTOURS



KEY TO LIGHTING SYMBOLS

- LIGHTING UNIT TYPE "A1"
NEW 6m ADOPTABLE LIGHTING UNIT, COMPRISING:
COLUMN:
ALUMINIUM LIGHTING COMPANY 6m, CONICAL HOCKEY STICK WITH 400mm OUTREACH, 42mm
DIAMETER MOUNTING SPIGOT, BRUSHED ALUMINIUM FINISH WITH THERMOPLASTIC ROOT
PROTECTION EXTENDING TO 250mm ABOVE FINISHED GROUND LEVEL.
LUMINAIRE:
TRT ASPECT MINI
CIRCUIT WATTAGE = 19W, GR2 OPTIC, 3000K (WARM WHITE) LEDs, 7 PIN NEMA SOCKET
2.39km FLUX PACKAGE, SIDE ENTRY MOUNTING SOCKET FOR 42mm SPIGOT
CMS NODE:
CHARLES ENDIRECT DATEK NEMA NODE FOR CELtek CMS c/w GPS. Ref. CEV8977
ISOLATOR:
CHARLES ENDIRECT L2/SFE ISOLATOR c/w 6A BS88 FUSE (SPECIFICATION DEPENDENT ON INCOMING
SUPPLY)
WIRING WITHIN COLUMN:
1.5mm² ARCTIC GRADE PVC INSULATED 3 CORE FLEX 230V
- LIGHTING UNIT TYPE "B1"
NEW 6m ADOPTABLE LIGHTING UNIT, COMPRISING:
COLUMN:
ALUMINIUM LIGHTING COMPANY 6m, CONICAL HOCKEY STICK WITH 400mm OUTREACH, 42mm
DIAMETER MOUNTING SPIGOT, BRUSHED ALUMINIUM FINISH WITH THERMOPLASTIC ROOT
PROTECTION EXTENDING TO 250mm ABOVE FINISHED GROUND LEVEL.
LUMINAIRE:
TRT ASPECT MINI
CIRCUIT WATTAGE = 19W, GR5 OPTIC, 3000K (WARM WHITE) LEDs, 7 PIN NEMA SOCKET
2.39km FLUX PACKAGE, SIDE ENTRY MOUNTING SOCKET FOR 42mm SPIGOT
CMS NODE:
CHARLES ENDIRECT DATEK NEMA NODE FOR CELtek CMS c/w GPS. Ref. CEV8977
ISOLATOR:
CHARLES ENDIRECT L2/SFE ISOLATOR c/w 6A BS88 FUSE (SPECIFICATION DEPENDENT ON INCOMING
SUPPLY)
WIRING WITHIN COLUMN:
1.5mm² ARCTIC GRADE PVC INSULATED 3 CORE FLEX 230V
- LIGHTING UNIT TYPE "B2"
NEW 6m ADOPTABLE LIGHTING UNIT FOTTED WITH REAR LIGHT SHIELD, COMPRISING:
COLUMN:
ALUMINIUM LIGHTING COMPANY 6m, CONICAL HOCKEY STICK WITH 400mm OUTREACH, 42mm
DIAMETER MOUNTING SPIGOT, BRUSHED ALUMINIUM FINISH WITH THERMOPLASTIC ROOT
PROTECTION EXTENDING TO 250mm ABOVE FINISHED GROUND LEVEL.
LUMINAIRE:
TRT ASPECT MINI
CIRCUIT WATTAGE = 19W, GR5 OPTIC, BACK LIGHT SHIELD, 3000K (WARM WHITE) LEDs, 7 PIN NEMA
SOCKET
2.39km FLUX PACKAGE, SIDE ENTRY MOUNTING SOCKET FOR 42mm SPIGOT
CMS NODE:
CHARLES ENDIRECT DATEK NEMA NODE FOR CELtek CMS c/w GPS. Ref. CEV8977
ISOLATOR:
CHARLES ENDIRECT L2/SFE ISOLATOR c/w 6A BS88 FUSE (SPECIFICATION DEPENDENT ON INCOMING
SUPPLY)
WIRING WITHIN COLUMN:
1.5mm² ARCTIC GRADE PVC INSULATED 3 CORE FLEX 230V
- EXISTING 6m ADOPTABLE LIGHTING UNIT WITH POST TOP LUMINAIRE, TO REMAIN.
SHOWN FOR TIE-IN
(19W ASPECT MINI LUMINAIRE USED IN CALCULATIONS)
- 1m X 1m ADOPTABLE PAD TO BE BUILT AROUND COLUMN BASE, AND CONSTRUCTED FROM SIMILAR
MATERIALS TO CARRIAGEWAY. COLUMN TO BE SETBACK IN THIS SUCH THAT THE FRONT FACE IS 0.8m
BEHIND THE KERB LINE

INSTALLATION INSTRUCTIONS

ALL NEW EQUIPMENT FOR ADOPTABLE AREAS IS TO BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH MERTHYR
TYDFIL COUNTY BOROUGH COUNCIL SPECIFICATIONS

ALL ELECTRICAL INSTALLATION IS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF BS7671

COLUMN Nos SHOWN ARE FOR DESIGN PURPOSES ONLY. COLUMNS ARE TO BE NUMBERED ON SITE IN ACCORDANCE
WITH THE INSTRUCTION OF THE MERTHYR TYDFIL COUNTY BOROUGH COUNCIL ENGINEER.

CDM NOTES

HEALTH AND SAFETY (CDM2015)
SEE FULL DESIGN RISK ASSESSMENT P20478-S38-DRA

IT IS EXPECTED THAT ALL INSTALLATION, MAINTENANCE AND DECOMMISSIONING WORKS ASSOCIATED WITH THIS
LIGHTING PROPOSAL, ARE UNDERTAKEN BY A SUITABLY QUALIFIED AND COMPETENT STREET LIGHTING CONTRACTOR,
WHO WILL BE AWARE OF THE USUAL HAZARDS ASSOCIATED WITH THIS TYPE OF PROJECT.

RESIDUAL RISKS
INSTALLATION
PROPOSED SITE SERVICES DRAWINGS NOT AVAILABLE AT THE TIME OF DESIGN BUT UNDERGROUND SERVICES
ARE EXPCTED AT ALL LOCATIONS. STATS DRAWINGS MUST BE CHECKED PRIOR TO INSTALLATION AND THE
DESIGNER NOTIFIED OF ANY CONFLICTS. ADOPT HSG 047 SAFE DIGGING PRACTICES AT ALL TIMES
MAINTENANCE - NONE NOTED
DECOMMISSIONING - STREET LIGHTING COLUMNS CAN ONLY BE REMOVED SAFELY WHEN COLUMN IS FULLY
ISOLATED. CONTRACTOR IS REQUIRED TO HAVE NECESSARY RAMS IN PLACE FOR THESE WORKS.

DESIGN COMMENTARY

SELECTION OF LIGHTING CLASS
FROM BS5489-1:2020 TABLE A5, ASSUMING:
QUIET USAGE ASSOCIATED WITH ACCESS TO PROPERTIES ONLY
E3 AMBIENT LUMINANCE
LIGHTING CLASS = P4

LIGHTING EQUIPMENT
THE LUMINAIRE TYPE AND COLUMN TYPE AND HEIGHT ARE SELECTED TO COMPLY WITH MERTYR TYDFIL STANDARDS

MAINTENANCE FACTOR
THE DESIGN USES A MAINTENANCE FACTOR OF 0.76 IN ALL CALCULATIONS
THIS ASSUMES:
LANTERN CLEANING - 72 MONTH CLEANING IN E3 AREA FOR 6m HEIGHT = 0.84 (FROM TABLE B1 OF BS5489)
LUMEN DEPRECIATION OF LED = 0.90 (LANTERN MANUFACTURERS DATA

GENERAL

3000K WARM WHITE LEDs HAVE BEEN PROPOSED

A P4 LIGHTING CLASS REQUIRES - AVERAGE ILLUMINANCE = 5.0 TO 7.5 LUX, MINIMUM ILLUMINANCE = 1.0 LUX

COLUMNS ARE TO BE SITED IN ADOPTABLE LAND AT THE REAR OF THE FOOTPATH WHERE FEASIBLE
WHERE THERE IS A VERGE BETWEEN ADOPTABLE FOOTPATH AND ROAD, THE COLUMN IS SITED AT THE REAR OF THE
VERGE
IN AREAS OF SHARED SURFACE WITH NO FOOTPATH, THE COLUMN IS TO BE SITED 800mm BEHIND THE KERB ON A 1m
X 1m PARCEL OF LAND TO BE DEDICATED AS ADOPTABLE.
WHERE POSSIBLE, COLUMNS ARE POSITIONED ON PARTY BOUNDARIES BETWEEN PROPERTIES OR AT THE CORNERS
OF PROPERTIES TO MINIMISE POSSIBLE PROBLEMS OF LIGHT INTRUSION TO BEDROOM WINDOWS.

LANTERNS ARE MOUNTED AT 0 DEGREES INCLINATION, SO WILL GIVE NO DIRECT UPWARDS LIGHT
TREES SHOULD NOT BE PLANTED WITHIN 5m OF THE INDICATED COLUMN POSITIONS

THE ACCESS TO PLOT 009 IS NOT LIT FULLY TO STANDARD. TO ACHIEVE 1 LUX IN THIS AREA WOULD REQUIRE
ADDITIONAL LIGHTING WHICH IS CONSIDERED EXCESSIVE

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ALL ELECTRICAL INSTALLATION IS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF BS7671

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WITH THE INSTRUCTION OF THE MERTHYR TYDFIL COUNTY BOROUGH COUNCIL ENGINEER.

ORNATES

NOT FOR CONSTRUCTION

Horizontal Illuminance (lux)

B	Base layout rev 8 used, LP 1-2 repositioned	DPL	1/12/22
A	RE-DRAWN WITH NEW BASE LAYOUT	DPL	28/11/22
REV	DESCRIPTION	ORIGIN	CHK

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CLIENT/CUSTOMER		
Persimmon Homes East Wales		
PROJECT		
TWNRYODYN MERTHYR TYDFIL		
TITLE		
ON SITE STREET LIGHTING PROPOSAL		
DRAWN	SCALE	DATE
DPL	1:500 @ A0	29-11-2022
DRAWING NUMBER	ISSUE	
P20478-S38-02	B	
DO NOT SCALE FROM THIS DRAWING		
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