

Company	SHD Lighting Consultancy Ltd
Designer	Stephen Higham

Client	Vistry (Merseyside)
Date	25/04/2025

Title	Lickers Lane
Project no.	SHD2082

Stage	Early design
Status	Preliminary
Operation scenario	FP01 Cable Calculation

Project revisions

Revision	Revision by	Revision date	Comment
R0	Steve Higham	25/04/2025	

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Main supply report									
Company		SHD Lighting Consultancy Ltd							
Designer		Stephen Higham							
Supply details									
Description		Supply							
Supply method		User defined source/origin point Supply@100kVA							
Phase/Voltage		Single-phase 230V 50Hz							
Earthing system		TN-C-S							
Voltage drop limit		Public supply: Lighting 3%, other uses 5%							
Prospective 1Ph fault				Prospective Ph to N fault					
Ipf (kA)		7.2463		Ipn (kA)		7.2463			
Zpf (Ω)		0.0317		Zpn (Ω)		0.0317			
p.f.		0.5		p.f.		0.5			
Prospective earth fault				Earthing arrangements					
Ief (kA)		0.6571		Earthing conductor (mm²)		1x25			
Ze (Ω)		0.351		Earthing electrode resistance (Ω)		0			
p.f.		0.5		Main bonding conductor (mm²)		25			
Min/Max Fault levels									
Isc-max (kA)		7.0415	Cmax	1	Isc-min (kA)		7.2463	Cmin	1
Protection by supplier					Main protective device				
-					Fuse 1P 25A/80kA Generic BS88 fuses				
Meter tails			25mm² Single-core 70°C PVC non-armoured, L:1m						
Load calculations									
Phase		L1		L2		L3		N	
Connected load (A)		0.12		0		0		0.12	
Diversified load (A)		0.12		0		0		0.12	
Spare load (A)		0 (0%)		0		0		-	
Design load power calculations									
Phase		L1		L2		L3		Total	
Design load (A) (Diversified + Spare)		0.12		0		0		N:0.12	
kVA		0.03		0		0		0.03	
kW		0.03		0		0		0.03	
kVAr		0		0		0		0	
cos φ		1		1		1		1	
Main conductor			2Cx25mm² + 1x25mm² E PVC70/M/Cu Length: 1m						

Maximum demand report												
Company		SHD Lighting Consultancy Ltd										
Designer		Stephen Higham										
Supply details												
Description		Supply										
Supply method		User defined source/origin point Supply@100kVA										
Phase/Voltage		Single-phase 230V 50Hz										
Earthing system		TN-C-S										
Design load power calculations												
Phase		L1			L2			L3			Total	
kVA		0.03			0			0			0.03	
kW		0.03			0			0			0.03	
kVAr		0			0			0			0	
cos φ		1			1			1			-	
Load calculations												
Phase		L1			L2			L3			N	
Connected load (A)		0.12			0			0			0.12	
Diversified load (A)		0.12			0			0			0.12	
Spare load (A)		0 (0%)			0			0				
Design load (A) (Diversified + Spare)		0.12			0			0			N:0.12	
Load power calculations per switchboard and distribution board												
Description [Load type]		Power factor			Connected Load (A)				Connected Load (kVA)			
Supply area (m²)		Diversity factor			Diversified load (A)				Diversified load (kVA)			
Load density (W/m²)		Spare load (%)			Diversified + Spare load (A)				Diversified + Spare load (kVA)			
		L1	L2	L3	L1	L2	L3	N	L1	L2	L3	Total
FP01 [Sub-Circuits]		1	1	1	0.12	0	0		0.03	0	0	0.03
N/A		1	1	1	0.12	0	0		0.03	0	0	0.03
N/A		0	0	0	0.12	0	0	0.12	0.03	0	0	0.03

Circuits schedule report : FP01



Company	SHD Lighting Consultancy Ltd
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Description		Voltage	Phase	Total circuit ways		Spare load	Spare ways		Empty ways		
FP01		230V AC	SP&N	4		0%	0		1Ph: 3 (75%)		
							L1	L2	L3		
Location:		Mounting:	Surface	Reference No.:		Connected load (A) Diversified load (A) Diversified+Spare load (A)	0.12				
Connected from:	Supply	IP Rating:	IP 4X	Isolator Rating:			0.12				
Zs (Ω):	0.3521	Board Rating (A):		Fault Rating (kA):			0.12				
Incomer device											

				Power factor Diversity factor 3rd Harmonics %			Connected load (A) Diversified load (A) Diversified+Spare load (A)		
Way	Description	Conductor	Protective devices	L1	L2	L3	L1	L2	L3
1.L1	PR01	3Cx6mm ² (E cable core) SWA/XLPE90(70)/Cu Length: 5m	Fuse 1P 16A/80kA Generic BS88 fuses	1 1 0			0.12 0.12 0.12		
2.L1	empty								
3.L1	empty								
4.L1	empty								
L1	FP01	2Cx25mm ² + 1x25mm ² E PVC70/M/Cu Length: 1m	Fuse 1P 25A/80kA Generic BS88 fuses	1 1 0			0.12 0.12 0.12		

Circuits schedule report : PR01



Company	SHD Lighting Consultancy Ltd
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Description	Voltage	Phase	Total circuit ways			Spare load	Spare ways				
PR01	230V AC	SP&N	2			0%	0				
								L1	L2	L3	
Location:		Mounting:	Surface	Reference No.:		Connected load (A) Diversified load (A) Diversified+Spare load (A)	0.12				
Connected from:	FP01	IP Rating:	IP 4X	Isolator Rating:			0.12				
Zs (Ω):	0.3719	Board Rating (A):		Fault Rating (kA):			0.12				
Incomer device											

				Power factor Diversity factor 3rd Harmonics %			Connected load (A) Diversified load (A) Diversified+Spare load (A)		
Way	Description	Conductor	Protective devices	L1	L2	L3	L1	L2	L3
1.L1	Street Light	3Cx1.5mm ² (E cable core) PVC70/M/Cu Length: 7m	Fuse 1P 6A/80kA Generic BS88 fuses	1 1 0			0.06 0.06		
2.L1	PR02	3Cx6mm ² (E cable core) SWA/XLPE90(70)/Cu Length: 32m		1 1 0			0.06 0.06 0.06		
1.L1	Street Light	3Cx1.5mm ² (E cable core) PVC70/M/Cu Length: 7m	Fuse 1P 6A/80kA Generic BS88 fuses	1 1 0			0.06 0.06		
L1	PR01	3Cx6mm ² (E cable core) SWA/XLPE90(70)/Cu Length: 5m	Fuse 1P 16A/80kA Generic BS88 fuses	1 1 0			0.12 0.12 0.12		

Lighting columns schedule report : PR01	
Company	SHD Lighting Consultancy Ltd
Designer	Stephen Higham



Supplied from:	FP01	Voltage:	230V AC	Max. volt drop/Limit:	0.01% (Street Light)/Public supply: 3%
First column:	PR01	Location:		Total load (A):	0.12
Cables to Columns: Multicore 90°C XLPE armoured		Total length(m): 37		Cables to Lightings: Multicore 70°C PVC non-armoured	
				Total length(m): 14	

Column	Supplied from	Protective devices			Cable to column	Length(m)	Load(A)
[L1] PR01	FP01	Fuse 1P 16A/80kA			3Cx6mm² (E cable core), SWA/XLPE90(70)/Cu	5	0.12
Lighting	Watts	cos(φ)	3rd Harmonics	Protective devices	Cable to lighting	Length(m)	Volt Drop
[L1] Street Light	1x14W	1	0%	Fuse 1P 6A/80kA	3Cx1.5mm² (E cable core), PVC70/M/Cu	7	0.01%
Column	Supplied from	Protective devices			Cable to column	Length(m)	Load(A)
[L1] PR02	PR01				3Cx6mm² (E cable core), SWA/XLPE90(70)/Cu	32	0.06
Lighting	Watts	cos(φ)	3rd Harmonics	Protective devices	Cable to lighting	Length(m)	Volt Drop
[L1] Street Light	1x14W	1	0%	Fuse 1P 6A/80kA	3Cx1.5mm² (E cable core), PVC70/M/Cu	7	0.01%

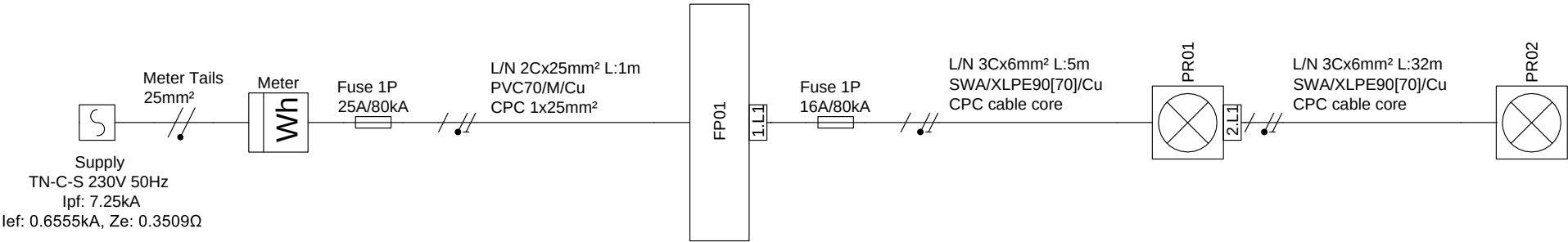
Cables schedule report		SHD OUTDOOR LIGHTING CONSULTANCY
Company	SHD Lighting Consultancy Ltd	
Designer	Stephen Higham	

Cable ID	Voltage	From	To	L (m)	Make-up	Type	Method	Classification
c-d-1	230V AC	Supply	FP01	1	2Cx25mm² + 1x25mm² E PVC70/M/Cu	Multicore 70°C PVC non-armoured - Cu	Ref. C - Clipped direct	
c-d-2	230V AC	FP01	PR01	5	3Cx6mm² (E cable core) SWA/XLPE90 (70)/Cu	Multicore 90°C XLPE armoured (Run to 70 °C) - Cu	Ref. D - In underground ducts	
c-f-1	230V AC	PR01	Street Light	7	3Cx1.5mm² (E cable core) PVC70/M/Cu	Multicore 70°C PVC non-armoured - Cu	Ref. C - Clipped direct	
c-d-2	230V AC	PR01	PR02	32	3Cx6mm² (E cable core) SWA/XLPE90 (70)/Cu	Multicore 90°C XLPE armoured (Run to 70 °C) - Cu	Ref. D - In underground ducts	
c-f-1	230V AC	PR02	Street Light	7	3Cx1.5mm² (E cable core) PVC70/M/Cu	Multicore 70°C PVC non-armoured - Cu	Ref. C - Clipped direct	

Warnings

No Warnings were found in the calculated circuits

Symbols	
	Fuse
	General source
	Lighting Unit
	Lighting final circuit



All Distribution Circuits								
Working Voltage	From	To	Conductor Make-up	Conductor Type	Length (m)	Method	Protective Device	Voltage Drop
230V AC	Supply	FP01	2Cx25mm² + 1x25mm² E	PVC70/M/Cu	1	Ref. C - Clipped direct	Fuse 1P 25A/80kA	0 %
230V AC	FP01	PR01	3Cx6mm² (E cable core) (Run to 70 °C)	SWA/XLPE90(70)/Cu	5	Ref. D - In underground ducts	Fuse 1P 16A/80kA	0 %
230V AC	PR01	PR02	3Cx6mm² (E cable core) (Run to 70 °C)	SWA/XLPE90(70)/Cu	32	Ref. D - In underground ducts	N/A	0 %

Project description:		Details:			
Lickers Lane		FP01 Cable Calculation - Main			
Design firm:		Design by:	Design date:	Drawing No.:	
SHD Lighting Consultancy Ltd		Stephen Higham	25/04/2025		
Client:		Revision by:	Revision date:	Sheet No.:	
Vistry (Merseyside)		Steve Higham	25/04/2025		