



**ENVISION AESC  
GIGA ONE PROJECT**

**ELECTRICAL SERVICES  
BASIS OF DESIGN DOCUMENT  
EXTERNAL LIGHTING**

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## **CONTENTS**

1.0 Basis of Design Document

Area Details		Proposed Lighting Options							Basis of Design				Calculation Results			Notes and Observations
Area Name	Mounting Height (m)	Reference	Proposed Manufacturer	Proposed Range	Wattage	LOR	CRI	Colour Temperature	Total Run Hours (20 Years)*	Calculation Plane Height	Target Illuminance Level	Target Uniformity Requirement	Calculation Ref.	Archived Illuminance Level	Achieved Uniformity Level	
Roadway (North, South, West)	8m	B1	Kingfisher	Viva City Pro 80W LED AY70	80	1.00	>70	4000 K	31000	0	20*	0.4*	Ext. Ltg 08.08.2022	21	0.08	
Roadway (East and Site Access)	8m	B1	Kingfisher	Viva City Pro 80W LED AY70	80	1.00	>70	4000 K	31000	0	20*	0.4*	Ext. Ltg 08.08.2023	20.7	0.09	
Access Road for Car Park	8m	A1	Kingfisher	Viva City Pro 80W LED FW70	80	1.00	>70	4000 K	31000	n/a	20*	0.4*	Kingfisher drg.	20.21	0.49	
Road at the Bottom	8m	B1	Kingfisher	Viva City Pro 80W LED AY70	80	1.00	>70	4000 K	31000	n/a	20*	0.4*	Kingfisher drg.	23.58	0.55	
Roads around Loading Area	8m	B1	Kingfisher	Viva City Pro 80W LED AY70	80	1.00	>70	4000 K	31000	n/a	20*	0.4*	Kingfisher drg.	24.55	0.41	
Walkway (Entire Site)	Various	Various	Kingfisher	Various types	Varies	>1	>70	4000K	31000	0	5*	0.25*	Ext. Ltg 08.08.2023	25	0.31	Elevated levels as a result of close proximity overspill from Roadway Lighting
Pathways	Various	Various	Kingfisher	Various types	Varies	>1	>70	4000K	31000	n/a	5*	0.25*	Kingfisher drg.	27.74	0.43	Elevated levels as a result of close proximity overspill from Roadway Lighting
Top Right Footpath	1m	G	Kingfisher	Helvellyn 2.0 15W LED	15	1.00	>70	4000 K	31000	n/a	5*	0.25*	Kingfisher drg.	17.75	0.39	Elevated levels as a result of close proximity overspill from Roadway Lighting
Roadway (Public Highway, no longer covered)																These luminaires deleted from scheme as this is the adopted highway
Highways Road																Measure of overspill lighting from main scheme
Parking	12m	E2	Kingfisher	Zactis 250W LED FW70	500	1.00	>70	4000 K	31000	0	20***	0.25***	Ext. Ltg 08.08.2022	24.9	0.45	
Car Park	12m	E2	Kingfisher	Zactis 250W LED FW70	500	1.00	>70	4000 K	31000	n/a	20***	0.25***	Kingfisher drg.	26.25	0.34	
Bicycle and Motor Cycle Shelters	Various	Various	Kingfisher	Various types	Varies	>1	>70	4000K	31000	0	5*	0.25*	Ext. Ltg 08.08.2022	23.7	0.58	Elevated levels as a result of close proximity overspill from Roadway Lighting
Cycle Shelters	Various	Various	Kingfisher	Various types	Varies	>1	>70	4000K	31000	n/a	5*	0.25*	Kingfisher drg.	22.03	0.77	Elevated levels as a result of close proximity overspill from Roadway Lighting
Goods In Yard	8m	B	Kingfisher	#N/A	#N/A	#N/A	#N/A	#N/A	31000	0	20**	0.25**	Ext. Ltg 08.08.2022	32	0.08	
Goods In Yard bottom	8m	CW	Kingfisher	Zactis 160W LED FL50	160	1.00	>70	4000 K	31000	n/a	20**	0.25**	Kingfisher drg.	34.99	0.4	
Goods In Yard	8m	CW	Kingfisher	Zactis 160W LED FL50	160	1.00	>70	4000 K	31000	0	20**	0.25**	Ext. Ltg 08.08.2022	25.6	0.4	
Goods In Yard top	8m	CW	Kingfisher	Zactis 160W LED FL50	160	1.00	>70	4000 K	31000	n/a	20**	0.25**	Kingfisher drg.	28.36	0.42	
Goods Out Yard	8m	CW	Kingfisher	Zactis 160W LED FL50	160	1.00	>70	4000 K	31000	0	20**	0.25**	Ext. Ltg 08.08.2022	35.4	0.39	
Goods Out Yard Top	8m	CW	Kingfisher	Zactis 160W LED FL50	160	1.00	>70	4000 K	31000	n/a	20**	0.25**	Kingfisher drg.	38.42	0.39	
Goods Out Yard	8m	A1	Kingfisher	Viva City Pro 80W LED FW70	80	1.00	>70	4000 K	31000	0	20**	0.25**	Ext. Ltg 08.08.2022	35.5	0.4	
Goods Out Yard Bottom	8m	CW	Kingfisher	Zactis 160W LED FL50	160	1.00	>70	4000 K	31000	n/a	20**	0.25**	Kingfisher drg.	39.39	0.43	
Level Access Canopy (Goods in South)	3m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	0	50*	0.4*	Ext. Ltg 08.08.2022	49	0.52	Similar Guidance in Table 4.3 of LG1
Under Canopy Loading	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	n/a	50*	0.4*	Kingfisher drg.	50.34	0.66	Similar Guidance in Table 4.3 of LG1
Level Access Canopy (Goods Out South)	7m	G	Kingfisher	Helvellyn 2.0 15W LED	15	1.00	>70	4000 K	31000	0	50*	0.4*	Ext. Ltg 08.08.2022	61.8	0.49	Similar Guidance in Table 4.3 of LG1
Goods Out Canopy Bottom	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	n/a	50*	0.4*	Kingfisher drg.	65.07	0.49	Similar Guidance in Table 4.3 of LG1
Level Access Canopy (Goods Out North)	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	0	50*	0.4*	Ext. Ltg 08.08.2022	60.9	0.49	Similar Guidance in Table 4.3 of LG1
Goods Out Canopy Top	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	n/a	50*	0.4*	Kingfisher drg.	61.47	0.41	Similar Guidance in Table 4.3 of LG1
Outside Waste Collection Canopy	7m	D	Kingfisher	Zactis 160W LED FW70	160	1.00	>70	4000 K	31000	0	50*	0.4*	Ext. Ltg 08.08.2022	47.9	0.51	Similar Guidance in Table 4.3 of LG1
External Waste Compund	10m	D	Kingfisher	Zactis 160W LED FW70	160	1.00	>70	4000 K	31000	n/a	20**	0.25**	Kingfisher drg.	34.58	0.58	
NMP and waste Oil Water Canopy	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	0	50*	0.4*	Ext. Ltg 08.08.2022	49.1	0.37	Similar Guidance in Table 4.3 of LG1
NMP and Waster Water Canopy	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	n/a	50*	0.4*	Kingfisher drg.	46.11	0.54	Similar Guidance in Table 4.3 of LG1
Waste Collection Canopy (1)	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	0	50*	0.4*	Ext. Ltg 08.08.2022	51.9	0.41	Similar Guidance in Table 4.3 of LG1
Waste Collection Canopy (2)	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	0	50*	0.4*	Ext. Ltg 08.08.2022	52.1	0.44	Similar Guidance in Table 4.3 of LG1
Waste Collection Canopy 1 and 2	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	n/a	50*	0.4*	Kingfisher drg.	54.42	0.42	Similar Guidance in Table 4.3 of LG1
Bulk Store Canopy	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	0	50*	0.4*	Ext. Ltg 08.08.2022	61.3	0.82	Similar Guidance in Table 4.3 of LG1
Bulk Store Canopy	7m	X3	Kingfisher	Climate Extra 70W LED 6FT	70	1.00	>70	4000 K	31000	0	50*	0.4*	Kingfisher drg.	51.73	0.73	Similar Guidance in Table 4.3 of LG1
Weighbridge	8m	A1	Kingfisher	Viva City Pro 80W LED FW70	80	1.00	>70	4000 K	31000	n/a	20**	0.25**	Kingfisher drg.	27.22	0.92	Nearest guidance assuming this to be an area of occasional handling of goods.
Plant Area at the Bottom	8m	B1	Kingfisher	Viva City Pro 80W LED AY70	80	1.00	>70	4000 K	31000	n/a	20**	0.25**	Kingfisher drg.	28.93	0.41	Nearest guidance assuming this to be an area of occasional handling of goods.

Kingfisher Lighting Vendor Calculation Information from Drawing  
 Desco External Lighting Calculation as listed in Column 5

For comparison, areas are listed in adjacent rows to the closest match between Kingfisher and Desco calculation.  
 For areas which are sequentially lit by several luminaire references, 'Various' is applied in Column E.  
 Where a particular reference is dominant in number, that reference is applied in Column E

\* - Recommendation from CIBSE Lighting Guide 1, table 4.4  
 \*\* - Recommendation from CIBSE Lighting Guide 1, table 4.3  
 \*\*\* - Recommendation from BS EN 12464-2 Table 5.5