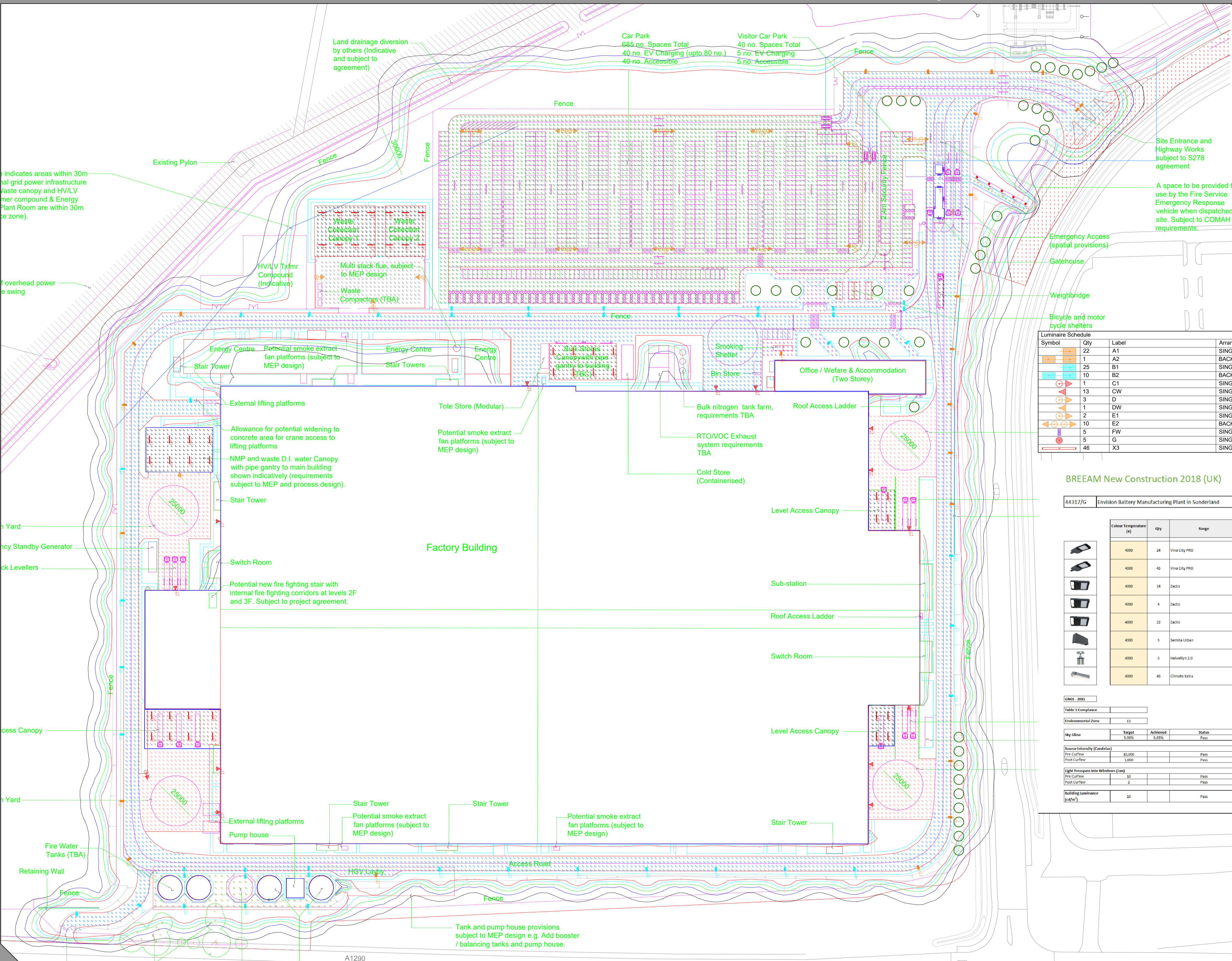


Dimensions are not to be scaled from this drawing



Kingfisher Lighting

Part of the Luceco PLC group of companies LUCECO



Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Min/Avg	Min/Max
NMP and Waste Water Canopy	Illuminance	Lux	46.11	63	25	0.54	0.40
Waste Collection Canopy 1 & 2	Illuminance	Lux	54.42	81	23	0.42	0.28
Access road for car park	Illuminance	Lux	20.21	43	10	0.49	0.23
Bulk Store Canopy	Illuminance	Lux	51.73	84	38	0.73	0.59
Car Park	Illuminance	Lux	26.25	66	9	0.34	0.14
Cycle Shelters	Illuminance	Lux	22.03	35	17	0.77	0.49
External Waste Compound	Illuminance	Lux	34.58	48	20	0.58	0.42
Goods In Yard bottom	Illuminance	Lux	34.99	100	14	0.40	0.14
Goods In Yard Top	Illuminance	Lux	28.36	91	12	0.42	0.13
Goods Out Canopy Bottom	Illuminance	Lux	65.07	84	32	0.49	0.38
Goods Out Canopy Top	Illuminance	Lux	61.47	83	25	0.41	0.30
Goods Out Yard Bottom	Illuminance	Lux	39.39	95	17	0.43	0.18
Goods Out Yard Top	Illuminance	Lux	38.42	94	15	0.39	0.16
Highways Road	Illuminance	Lux	1.46	12	0	0.00	0.00
Pathways	Illuminance	Lux	27.74	61	12	0.43	0.20
Plant area at the bottom	Illuminance	Lux	28.93	59	12	0.41	0.20
Road at the bottom	Illuminance	Lux	23.58	45	13	0.55	0.29
Roads around Loading areas	Illuminance	Lux	24.55	89	10	0.41	0.11
Top Right Footpath	Illuminance	Lux	17.75	33	7	0.39	0.21
Under canopy loading	Illuminance	Lux	50.34	67	33	0.66	0.49
Weighbridge	Illuminance	Lux	27.22	30	25	0.92	0.83

Luminaire Schedule

Symbol	Qty	Label	Arrangement	LLF	Description
A1	22	A1	SINGLE	0.900	80w LED 4000k Viva City Pro 805mA with FW70 Optic column mounted at 8m
A2	1	A2	BACK-BACK	0.900	2 x 80w LED 4000k Viva City Pro 805mA with FW70 Optic column mounted at 8m
B1	25	B1	SINGLE	0.900	80w LED 4000k Viva City Pro 805mA with AY70 Optic column mounted at 8m
B2	10	B2	BACK-BACK	0.900	2 x 80w LED 4000k Viva City Pro 805mA with AY70 Optic column mounted at 8m
C1	1	C1	SINGLE	0.900	160w LED 4000k Zactis 808mA Floodlight with FL50 Optic column mounted at 8m
CW	13	CW	SINGLE	0.900	160w LED 4000k Zactis 808mA Floodlight with FL50 Optic wall mounted at 8m
D	3	D	SINGLE	0.900	160w LED 4000k Zactis 808mA Floodlight with FW70 Optic column mounted at 10m
DW	1	DW	SINGLE	0.900	160w LED 4000k Zactis 808mA Floodlight with FW70 Optic wall mounted at 8m
E1	2	E1	SINGLE	0.900	250w LED 4000k Zactis 845mA Floodlight with FW70 Optic column mounted at 12m
E2	10	E2	BACK-BACK	0.900	2 x 250w LED 4000k Zactis 845mA Floodlight with FW70 Optic column mounted at 12m
FW	5	FW	SINGLE	0.900	11w LED 4000k Semita Urban bulkhead with cycle optic wall mounted at 3m
G	5	G	SINGLE	0.900	15w LED 4000k Helvellyn 2.0 1m high bollard
X3	46	X3	SINGLE	0.900	70w 4000k 1800mm Climate Extra Single LED Array (Standard) suspended at 7m

BREEAM New Construction 2018 (UK)

44137/G Envision Battery Manufacturing Plant in Sunderland

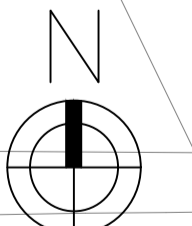
Colour Temperature (K)	Qty	Range	Light Source	Luminaire (Lumens)	Watts (W)	lm/W	LOR	Total Lumens	UKOR	Upward Lumens	CR	** ABE Hour Per Day	CO ₂ (t/annum)	kWh/Year
4000	24	Viva City PRO	80w LED FW70	11040	80	138.00	100%	264960	0.0%	0	>90	12	1.77	8020.00
4000	45	Viva City PRO	80w LED AY70	11120	80	139.00	100%	500400	0.0%	0	>90	12	3.31	27768.00
4000	14	Zactis	160w LED FL50	23360	160	146.00	100%	327040	0.0%	0	>90	12	2.06	9811.20
4000	4	Zactis	160w LED FW70	23320	160	137.00	100%	87508	0.0%	0	>90	12	0.29	2803.20
4000	22	Zactis	250w LED FW70	34250	250	137.00	100%	733500	0.0%	0	>90	12	3.06	24095.00
4000	5	Semita Urban	11w LED DC	1370	11	142.73	100%	7850	0.0%	0	>90	12	0.05	240.90
4000	5	Helvellyn 2.0	15w LED	3880	15	134.00	100%	9500	13.3%	1237	>90	12	0.07	328.50
4000	46	Climate Extra	70w LED	8400	70	120.00	100%	386400	0.0%	0	>90	12	2.36	14381.60

Total Installation Lumens | 2812730.00 | **Total Upward Light** | 0.0%
Total CO₂ Per Year (Tonnes) | 51.88
Total Electric Consumption (kWh) | 17.25
Total Electric Consumption Per Year (kWh) | 7555.00
Average Luminaire Lumens Per Circuit Watt | 131.49

Table 1 Compliance
 Environmental Zone: 13
 Sky glow: Target 5.00%, Achieved 4.00%, Status: Pass
 Source Intensity (Candelas): Pre-Curfew 10,000, Post-Curfew 1,000, Status: Pass
 Light Trespass into Windows (lux): Pre-Curfew 10, Post-Curfew 2, Status: Pass
 Building Luminance (cd/m²): 10, Status: Pass

Compliance Status
 Del 04: Reduction of Night Time Light Pollution: Pass
 Del 05: Energy Efficient External Lighting: Pass
 Del 07: Internal and External Lighting Levels: Pass

Note: HEART in this report only applies to exterior lighting
 ** ABE = (average flux time)
 Date: 13/03/2023



A1

Envision Battery Manufacturing Plant in Sunderland

Scale: 1:1000 at A1 | Project Number: D44317H

Date: 31 March 2023 | Drawing No.: D44317/LK/MH

Lighting Designer: Laura Karalevicic

For our LED lighting designs a 0.9m has been used. If this differs from the maintenance period for this project then you must advise us accordingly.

A lighting applications design service is provided by us in good faith and without charge, relating to Kingfisher products only. As such, whilst every endeavor is made for accuracy from information provided by yourselves, the final responsibility for the suitability of the design lies with the client. The company cannot, therefore, accept any liability or consequential loss incurred.