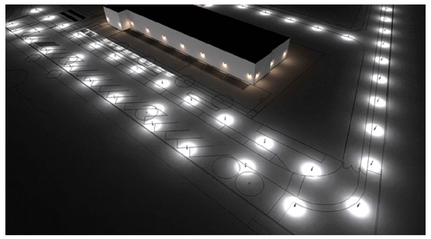
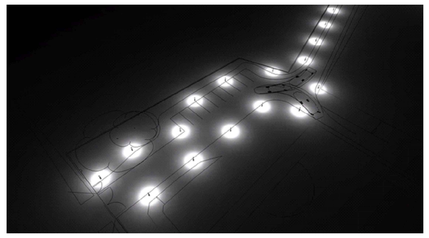
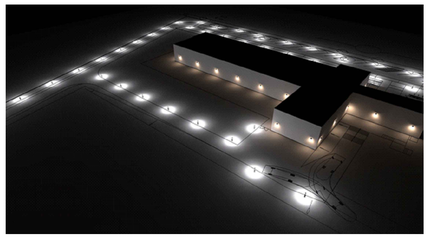
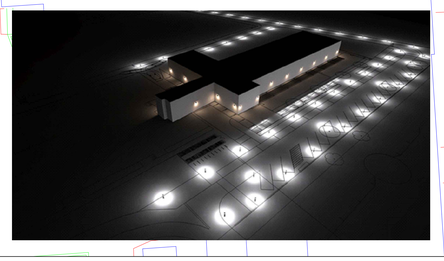
Dimensions are not to be scaled from this drawing.









Revision	Date	Description	Initials

90°

Pol 04 Reduction of night time light pollution

Zone	Surrounding	Lighting Environment	Examples
E1	Natural	Intrinsically dark	National parks or protected sites
E2	Rural	Low district brightness	Industrial or residential rural areas
E3	Suburban	Medium district brightness	Industrial or residential suburbs
E4	Urban	High district brightness	Town centres and commercial

Kingfisher Lighting

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Ene 03 External lighting

Number of credits available	Minimum standards
1	Yes

Aim

To recognise and encourage the specification of energy-efficient light fittings for external areas of the development.

Assessment Criteria

The following is required to demonstrate compliance for:

One credit

1. All external fittings, where provided, within the construction zone meet the lighting requirements as given in Table 1. External lighting requirements by location.
2. External light fittings are controlled through a time switch, or daylight sensor, to prevent operation during daylight hours. Daylight sensor override on a manually switched lighting circuit is acceptable.

Table 1 External lighting requirements by location

External lighting location	Light fittings measured in lamp lumens/circuit Watt, where:		LED luminaires where the lamp is integral to the fitting measured in luminaire lumens/circuit Watt, where:	
	Colour rendering index (Ra) ≥ 60	Colour rendering index (Ra) < 60	Colour rendering index (Ra) ≥ 60	Colour rendering index (Ra) < 60
Building, access ways, pathways	50	60	40	50
Car parking, associated roads, floodlighting	70	84	45	54
	Lamp wattage ≥ 20W	Lamp wattage < 20W	Lamp wattage ≥ 20W	Lamp wattage < 20W
Signs, uplighting	60	90	50	90

Table 2 – Obtrusive Light Limitations for Exterior Lighting Installations – General Observers

Environmental Zone	Sky Glow ULR [Max %] [1]	Light Intrusion (into Windows) E_v [lux] [2]		Luminaire Intensity I [candelas] [3]		Building Luminance Pre-curfew [4]
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	Average, L [cd/m²]
E0	0	0	0	0	0	0
E1	0	2	0 (1*)	2,500	0	0
E2	2.5	5	1	7,500	500	5
E3	5.0	10	2	10,000	1,000	10
E4	15	25	5	25,000	2,500	25

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P25440b - Cavendish School - Eastbourne

Qty	Range	Lamp type	LAMP Lumens	Circuit Watts	Lm/W	LOR	Total Lumens	ULR	Upward Lmns	RA	APF Hour Per Day	CO² Calculation for year Period	Rechour	Compliance with ENE 03
60	Deco-T	70w CDO-TT	7000	82.1	85.26	30.8%	120060	21.5%	21614.4	65	12	17.76	24375.36	Pass
30	Alfresco (Hood)	39w 2D	2700	38.0	71.05	15.1%	12231	6.9%	843.939	65	12	2.72	4993.20	Pass
3	Kloo 180 (Screened)	35w CDO-TT	3400	42.0	80.95	33.2%	3388.4	4.4%	149.0016	65	12	0.30	551.66	Pass

Total Installation Lumens		**144977.4**	**28805.3406**		
			Total ULR	**19.87%**	**Total CO² per year (Tonnes)**	**14.79**
Table 1 compliance	**Environmental zone**	**E3**			
					Total Electrical consumption (Kw)	**6.19**
	Target	**Achieved**	**Status**		
					Total Electrical consumption per year (Kwh)	**27,120.96**
Sky Glow	5.00%	19.87%	Fail		
Source Intensity (candelas)					
Pre curfew	10,000	0	Pass		**Note - we have not been able to calculate this as no housing is shown on the drawing**
Post curfew	1,000	0	Pass		**Note - we have assumed no fittings will be left on Post curfew**
Light Trespass into windows (Lux)					
Pre curfew	10	0	Pass		**Note - we have not been able to calculate this as no housing is shown on the drawing**
Post curfew	2	0	Pass		**Note - we have assumed no fittings will be left on Post curfew**
Building Luminance (cd/m²)	10				

Calculation Summary								
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Min/Avg**	**Min/Max**
Building Perimeter	Illuminance	Lux	10.00	26	3	0.30	0.12
Lower Car Park	Illuminance	Lux	20.93	104	4	0.19	0.04
Ramp	Illuminance	Lux	38.36	52	23	0.60	0.44
Rear Access Road	Illuminance	Lux	14.70	101	1	0.07	0.01
Stairs	Illuminance	Lux	46.00	57	32	0.70	0.56

Luminaire Schedule				
Symbol	**Qty**	**Label**	**Arrangement**	**Description**
	60	A	SINGLE	70w CDO-TT Deco bollard
	30	B	SINGLE	39w 2D Alfresco bulkhead with hood wall mounted at 2.3m.
	11	C	SINGLE	35w CDM-T Screened Kloo Bollard with 180° Spill shield

REFUSE STORE

Kingfisher Lighting

Partners in JV

HEMSA

ILP

CIBSE Ancillary Contractor

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Project Title

Cavendish School - Eastbourne

Scale	Project No
1:200 at A0	P25440B
Date	**Drawing No**
20/7/2015	P25440/PY/B

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