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Dimensions are not to be scaled from this drawing.

Compliance Status:

Pol 04 Reduction of night time light pollution	***Pass***
Ene 03 Energy efficent external lighting	***Fail***
Hea 01 Internal and external lighting levels	***Pass***

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P28389 - New Sports Pavilion, Shakespeare Road, Braunstone

Kingfisher Lighting

			LAMP	Circuit							ART	CO² Calculation for year	
Qty	Range	Lamp type	Lumens	Watts	LmW	LOR	Total Lumens	ULR	Upward Lmns	RA	Hour Per Day	CO² (Tonnes)	Kw/hour
8	Auriga	60w LED (ST)	5700	60.0	67.55	71.1%	32421.6	0.4%	129.6864	60	12	1.15	2102.40
12	Alfresco (Hood)	25w LED	2081	25.0	12.57	15.1%	3770.772	6.9%	260.183268	60	12	0.72	1314.00

Total Installation Lumens **36192.372** **389.869668**

Total ULR **1.08%** **Total CO² per year (Tonnes)** **1.86**

Total Electrical consumption (Kw) **0.78**

Total Electrical consumption per year (Kwh) **3,416.40**

Average luminaire lumens per circuit Watt 46.40

Table 1 compliance	**Environmental zone**	E3	
	Target	**Achieved**	**Status**
Sky Glow	5.00%	1.08%	Pass
Source Intensity (candelas)			
Pre curfew	10,000	640	Pass
Post curfew	1,000	0	Pass
Light Trespass into windows (Lux)			
Pre curfew	10	2	Pass
Post curfew	2	0	Pass
Building Luminance (cd/m²)	10		

Note - we have assumed no fittings will be left on Post curfew

Note - we have assumed no fittings will be left on Post curfew

The criteria for a design to achieve the ENE 03 credit have now changed. Designs are now required to achieve an average of 60 luminaire lumens per circuit watt.
This affects the type of fitting and light source that can be used, Please ensure that this is considered when comparing this drawing to previous designs or designs by others.
For more information contact our lighting design department or go to : http://goo.gl/VGQJNy (BREEAM's official website)

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Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Min/Avg	Min/Max
Access Road & Car Park	Illuminance	Lux	20.12	44	5	0.25	0.11
Building Perimeter	Illuminance	Lux	17.28	35	5	0.29	0.14
ObtrusiveLight_1_Cd_Seg1	Obtrusive Light - Cd	N.A.	86.63	258	39	0.45	0.15
ObtrusiveLight_1_Cd_Seg2	Obtrusive Light - Cd	N.A.	54.92	126	37	0.67	0.29
ObtrusiveLight_1_Cd_Seg3	Obtrusive Light - Cd	N.A.	51.50	76	38	0.74	0.50
ObtrusiveLight_1_Cd_Seg4	Obtrusive Light - Cd	N.A.	44.60	87	37	0.83	0.43
ObtrusiveLight_1_Cd_Seg5	Obtrusive Light - Cd	N.A.	46.27	52	38	0.82	0.73
ObtrusiveLight_1_Ill_Seg1	Obtrusive Light - Ill	Lux	0.63	2	0	N.A.	N.A.
ObtrusiveLight_1_Ill_Seg2	Obtrusive Light - Ill	Lux	0.08	1	0	N.A.	N.A.
ObtrusiveLight_1_Ill_Seg3	Obtrusive Light - Ill	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_1_Ill_Seg4	Obtrusive Light - Ill	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_1_Ill_Seg5	Obtrusive Light - Ill	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_2_Cd_Seg1	Obtrusive Light - Cd	N.A.	110.15	640	9	0.08	0.01
ObtrusiveLight_2_Cd_Seg2	Obtrusive Light - Cd	N.A.	61.58	125	39	0.63	0.31
ObtrusiveLight_2_Cd_Seg3	Obtrusive Light - Cd	N.A.	66.35	159	38	0.57	0.24
ObtrusiveLight_2_Cd_Seg4	Obtrusive Light - Cd	N.A.	47.93	108	37	0.77	0.34
ObtrusiveLight_2_Ill_Seg1	Obtrusive Light - Ill	Lux	0.55	2	0	N.A.	N.A.
ObtrusiveLight_2_Ill_Seg2	Obtrusive Light - Ill	Lux	0.25	1	0	N.A.	N.A.
ObtrusiveLight_2_Ill_Seg3	Obtrusive Light - Ill	Lux	0.20	1	0	N.A.	N.A.
ObtrusiveLight_2_Ill_Seg4	Obtrusive Light - Ill	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_3_Cd_Seg1	Obtrusive Light - Cd	N.A.	43.86	55	31	0.71	0.56
ObtrusiveLight_3_Ill_Seg1	Obtrusive Light - Ill	Lux	0.00	0	0	N.A.	N.A.
Walkways	Illuminance	Lux	19.54	38	8	0.41	0.21

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
	8	A	SINGLE	60w LED Auriga with street optic column mounted at 6m
	12	B	SINGLE	25W LED Alfresco bulkhead with hood wall mounted at 3m

rev.	description	date	drawn	approved
A	For Planning Application	July 16	NR	CW

information ☒ **approval** ☐ **tender** ☐ **contract** ☐ **construction** ☐

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Axis M&E Consulting Engineers

client

HSSP ARCHITECTS

project

NEW SPORTS PAVILION
SHAKESPEARE ROAD
BRAUNSTONE

drawing

PROPOSED EXTERNAL LIGHTING

drawn	approved	date	scale
N.R.	C.W.	JULY '16	1:250 @ A1

drawing ref. AX1680-E-01 **revision** A