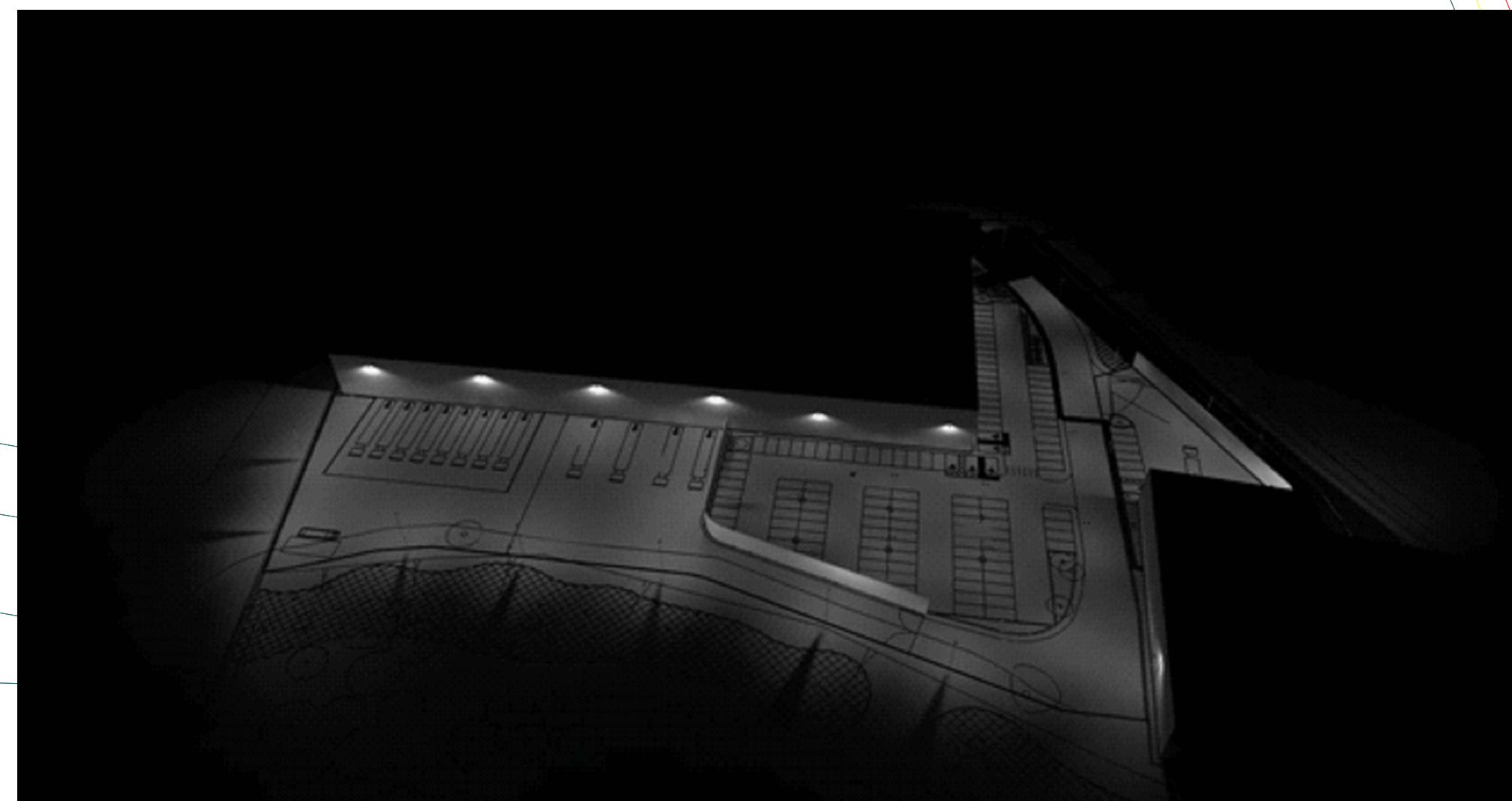


Farm stages

39.0m



Calculation Summary		CalcType	Units				
Label	Summation		Avg	Max	Min	MinAvg	MinMax
Cor Walk	Illuminance	N/A	24.03	44	7	0.29	0.15
Entrance Road	Illuminance	N/A	22.66	39	6	0.28	0.15
GLR - 1	Glare Rating	N/A	21.54	46	10	0.44	0.22
GLR - 2	Glare Rating	N/A	36.74	42	10	0.78	0.24
GLR - 3	Glare Rating	N/A	35.99	49	10	0.78	0.20
Lossing Road	Illuminance	N/A	40.05	55	12	0.71	0.36
Major Farm Cottages Verticals, Cd	Obscure Light - Cd	N/A	62.62	159	22	0.93	0.14
Major Farm Cottages Verticals, Ix	Obscure Light - Ix	N/A	21.13	40	5	0.48	0.20
Service Yard	Illuminance	N/A	36.06	61	10	0.54	0.26
Small Service Area	Illuminance	N/A	10.0	15	5	0.48	0.26

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	LLF	Description
	5	A	SINGLE	0.900	65w LED Viva-City wall mounted at 6m.
	6	B	SINGLE	0.900	65w LED Viva-City column mounted at 6m.
	3	C	BACK-BACK	0.900	30w LED Viva-City column mounted at 6m.
	8	D	SINGLE	0.900	160w LED Viva-City column mounted at 6m.
	6	E	SINGLE	0.900	160w LED Viva-City wall mounted at 6m.

Drain

BREEAM

Po 04 Reduction of night time light pollution			
No. of credits available: 1		Minimum Standards: No	
Date	Terminology	Lighting Environment	Examples
E1	Natural	immensity, dusk	Natural parks or protected sites
E2	Place	Low density brightness	Industrial or residential local areas
E3	Situation	Medium density brightness	Industrial or residential suburbs
E4	Urban	High-density brightness	Town centres and commercial

Environment at Zone	Sky Glow (cd/m ²) ⁽¹⁾	Light Intrusion (into Windows) ⁽²⁾ E [lux] ⁽³⁾	Luxenwair Intensity I [cd/m ²] ⁽⁴⁾	Building Luminaire Pre-curve ⁽⁵⁾		
		Pre-curve	Post-curve	Pre-curve	Post-curve	Average, L [cd/m ²]
01	0	0	0	0	0	0
02	0	2	0.1 (3 ¹)	2,500	900	5
03	2	5	1	2,500	500	5
04	5	10	2	10,000	1,000	10
05	15	25	5	25,000	2,500	25

EN101 : External lighting	
No. of credits available: 1	Minimum Standards: No
Aims To recognise and encourage the specification of energy efficient light fittings for external areas of the development.	

HS 4 Visual comfort	
No. of credits available: 1	Minimum Standards No
Aim To ensure lighting has been designed in line with best practice for visual performance and comfort. Assessment Criteria The following design issues compliance: • All external lighting located within the construction area is designed to provide (illumination levels) enable site workers outdoor task efficiently and accurately, specifically designed lighting. • To demonstrate that internal lighting provided is specified in accordance with: - BS 5909-2:2004 Lighting of roads and its amenity areas - BS 11264-2:2004 Light and lighting -Lighting of work spaces - Part 2: Outdoor workplaces	

The criteria for a design to achieve the FIVE ES credit have now changed. Designs are now required to achieve an average of 50 luminaire lumens per circuit wall.

BREEAM

Qty	Range	LED Output	LED Lamp Output	Lamp Lumens	Circuit Watts	LeWw	LOE	Luminance Lumens	LEOE	Spared Lumens	RA	AET Hour Per Day	COF Calculation for year
													COF (Hours) Payback
31	Viva City	65w LED (57)	Phase Select	6375	65	94.55	99.2%	67588	0.2%	0	60	12	1.71 \$141.73
36	Viva City	35w LED (37)	Phase Select	2825	35	94.56	99.0%	53688	0.0%	0	60	12	1.36 2612.80
34	Viva City	50w LED (37)	Phase Select	15875	165	94.56	99.2%	217256	0.0%	0	60	12	5.52 13117.10

Table 1 compliance			
Environmental zone			
Key factor	Target	Achieved	Status
Source intensity (contaminant)	2.50%	0.00%	Pass
Pvc on floor	1.500	150	Pass
Pvc on wall	500	0	Pass
Light (expansion into windows (kcal))			
Pvc on floor	5	0	Pass
Pvc on wall	5	0	Pass
Excluding luminance (dollar)	5		

The criteria for a design to achieve the BREEAM Excellent (now changed) Design are now required to achieve an average of 100 luminaire lumens per circuit watt, average of 50 luminaire lumens per circuit watt. This affects the type of lighting 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://www.breeam.org> (BREEAM's official website)

**Kingfisher
Lighting**



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



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Project Title

Island Road Reading Phase 2

Scale	Project No
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Date	Drawing No
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A lighting applications design service is provided by us in good faith and without charge, relating to Kingfisher products only. As such, while every endeavor is made for accuracy from information provided by you/yourself, the final responsibility for the suitability of the design is with the client. The company cannot, therefore, accept any liability consequential loss incurred.

Lighting Designer - Paul Yates MBE