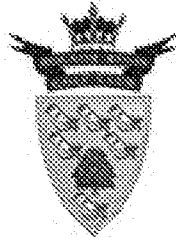




RIDGE

BOGNOR REGIS GOLF COURSE
LIGHTING STATEMENT

28 January 2022



Bognor Regis Golf Club

BOGNOR REGIS GOLF COURSE

28 January 2022

Prepared for

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1. INTRODUCTION

Ridge & Partners LLP has been appointed to produce an External Lighting Statement to support the planning application for the new Bognor Regis golf course. The new Bognor Regis golf course comprises of an 18 hole 72 par golf course, a 9 hole golf course, practice greens and a driving range as also a construction of a club house and associated golf facilities.

1.1. Site Location

The Bognor Regis golf course shall be located in Bognor Regis. The site location is shown in Figure 1.1 below.



Figure 1.1: New Bognor Regis golf course location (image credit Google)

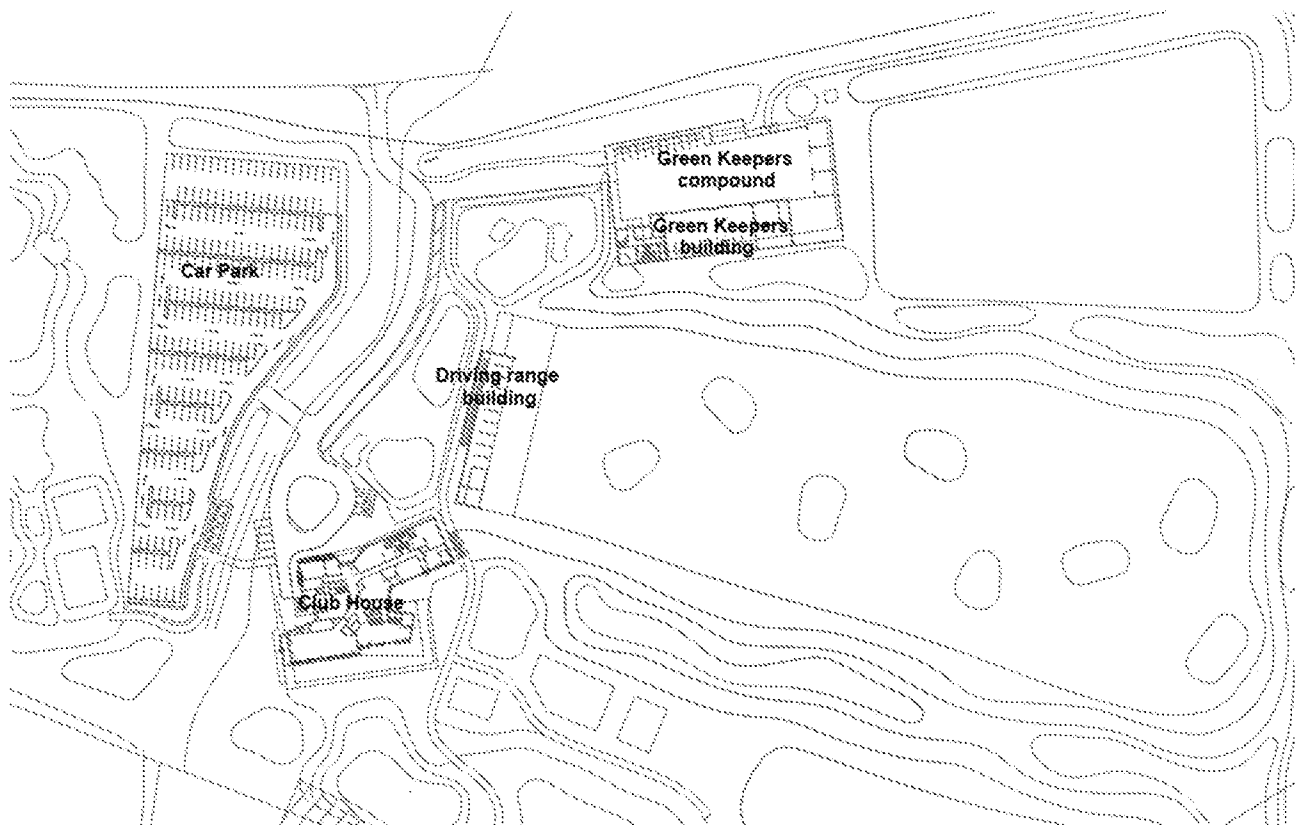


Figure 2.2: New Bognor Regis golf course location plan as provided by Noviun Architects

The Bognor Regis golf course site boundary is indicated by the red line in the figure 1.1 above.

The site is neighboured to the south by a residential development and to the north by the A259.

To the west and east of the site are open fielded areas not belonging to the new Bognor Regis golf course.

1.2. Development Proposals

The proposal is to illuminate the surroundings and main entrance of the new club house, footpaths to the car park area, car park area, buggy storage area, green keepers building and compound and access road to the development.

The image below indicates the proposed of the areas to illuminate:

- Club house surroundings and main entrance indicated by the red area
- Access road to the development indicated by the blue area
- Car park indicated by the green area
- Overflow car park indicated by the orange area
- Driving range building with buggy storage to the rear indicated by the purple area
- Green keepers compound indicated by yellow area

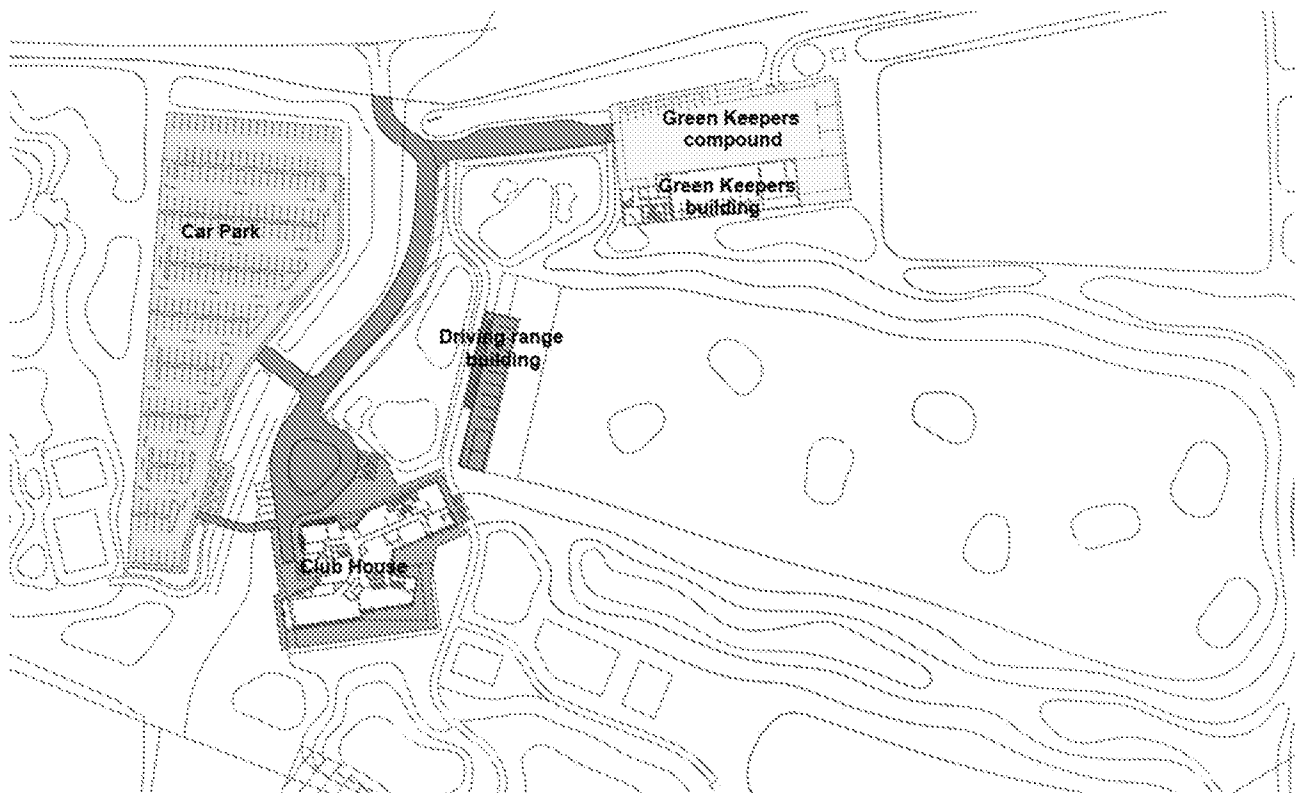


Figure 3.3: Proposed areas to illuminate

2. EXTERNAL LIGHTING STRATEGY

2.1. Design Criteria

The design criteria for the proposed scheme will comply with CIBSE Guide LG6 "The Outdoor Environment" and BS5489-1:2020 Lighting of roads and public amenity areas.

2.2. Reduction of Obtrusive Light

The external lighting will be designed in accordance with published standards and with reference to the Institution of Lighting Professionals "Guidance Notes for the Reduction of Obtrusive Light (GN01)".

Obtrusive light is often referred to as 'light pollution' and is manifested in the following:

- Sky glow, often caused by poor direction of light
- Glare, the brightness of a light source when viewed against a dark background
- Light Trespass, the spilling of light beyond the property or area being lit
- Over lighting, poor / over design resulting in inefficient use of energy

2.3. General Description and Strategy

The external lighting system will incorporate:

- Wall mounted LED luminaires surrounding the club house
- Ceiling mounted LED luminaires recessed above the main entrance of the club house
- Bollards mounted LED luminaires in front of the club house and on the rear patio
- Column mounted LED luminaires in the canopy on the rear patio to the club house
- LED column luminaires in the car park area
- Wall mounted LED luminaires above the doors of the driving range buggy storage
- LED column luminaires to the green keepers compound
- Wall mounted LED luminaires above the doors for general access to the green keepers building
- Wall mounted LED luminaires at high level to the green keepers building to illuminate the compound
- LED column luminaires to the access road to the development

The external lighting scheme will provide lighting to the main entrance and surroundings of the new club house, car park area, buggy storage area, green keepers building and compound and access road to the development.

The columns mounted luminaires will be controlled via photocells and dimmable controls. In the evening, when the natural daylight has reduced sufficiently the photocells will switch the luminaires on at 100%. The luminaires will automatically dim between 12 and 6am. In addition, these luminaires will be controlled by a timer with an override switch, so the luminaires can be turned on/off when required.

The bollards mounted luminaires will be controlled via photocells, so when the natural daylight has reduced sufficiently the photocells will switch the luminaires on at 100%. In addition, these luminaires will be controlled by a timer with an override switch, so the luminaires can be turned on/off when required.

The wall mounted luminaires surrounding the club house, above the doors on the buggy storage and above the doors on the green keepers building will be controlled via photocells and present detector (PIR). In the evening, when the natural daylight has reduced sufficiently the photocells will switch the luminaires on at

100% and if no movement is detected then the luminaires shall switch off. In addition, these luminaires will be controlled by a timer with an override switch, so the luminaires can be turned on/off when required.

The wall mounted luminaires at high level surrounding green keepers building will be controlled via photocells and by a timer with an override switch, so the luminaires can be turned on/off when required.

The luminaires mounted on the columns to the club house rear patio will be controlled via photocells and timer with an override switch, so the luminaires can be turned on/off when required.

Incorporating the timer with an override switch with the photocells will ensure the luminaires will only illuminate when the daylight has sufficiently reduced, plus allow the users to switch off the lighting when it is generally not required. For example, the override timers could be set to allow the lighting scheme to switch on between 4pm and 10pm (these times can be set as required), if daylight levels are sufficient the lighting will not actually illuminate until the photocell activates the lighting when the lighting levels have reduced.

Generally, luminaires will be selected to prevent the spread of light in an upward direction. Additionally, the luminaires will be specified and located to limit the spill of light and glare beyond the site boundary.

Lamp type and efficiency will also be evaluated, to ensure an energy efficient solution. Energy efficiency will also be an important consideration in the design, with photocells, presence detectors and timers with override switches being integrated into the overall lighting scheme.

3. PROPOSED LUMINAIRES

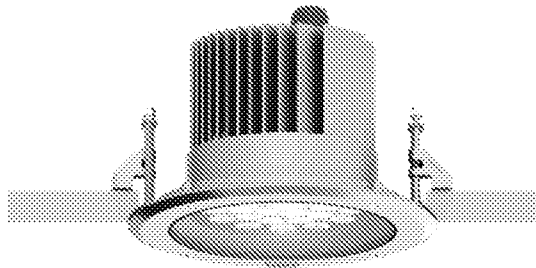
3.1. Club House

The main entrance and the areas surrounding the club house will be illuminated utilising wall, ceiling and bollards mounted luminaires.

The recessed ceiling mounted LED luminaires will be mounted at the main entrance ceiling of the club house with 3000K colour temperature LED. The luminaires shall be IP65 rated with die-cast aluminium body.

These luminaires will have a wide light distribution.

Dimensions: 200mm Ø x 124mm H



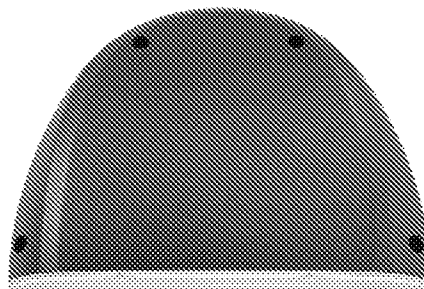
Nikon 3 by Ligman

The wall mounted LED luminaires will be mounted on the external walls of the club house between 2.3m and 3.4m high to suit the architecture of the building with 3000K colour temperature. The luminaires shall be IP66 rated with die-cast aluminium body and frosted polycarbonate lens.

These luminaires will be installed with an integral 3 hour maintained emergency battery backup, a miniature photocell and a presence detector (PIR).

These luminaires will have a wide light distribution.

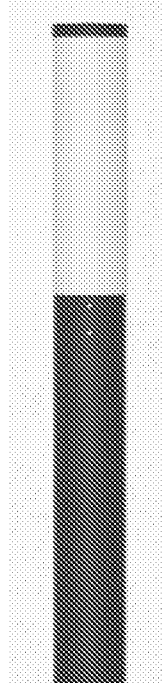
Dimensions: 340mm W x 235mm H x 182mmD



Kirium by DW Windsor

The bollards mounted LED luminaires will be mounted at the front of the club house at 2m high with 3000K colour temperature. The luminaires shall be IP66 rated with aluminium body.

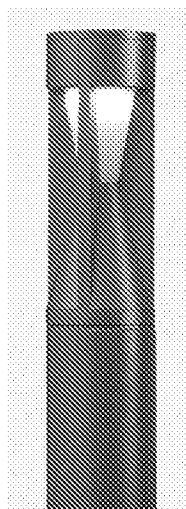
Dimensions: 170mm Ø x 2000mm H



Silka by DW Windsor

The bollards mounted LED luminaires will be mounted on the patio at rear of the club house at 1m high with 3000K colour temperature. The luminaires shall be IP66 rated with die-cast aluminium head and galvanised steel body.

Dimensions: 89mm Ø x 1000mm H

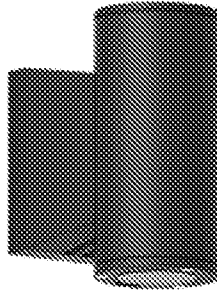


Pharola by DW Windsor

The column mounted LED luminaires will be located on the supports to the canopy on the patio at rear of the club house at 2.8m high with 3000K colour temperature. The luminaires shall be IP66 rated with die-cast aluminium body.

These luminaires will have a downward very wide light distribution.

Dimensions: 160mm W x 262mm H x 261mm D



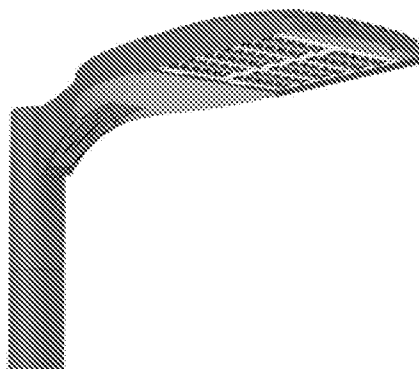
Jet 33 Wall by Ligman

The foot path from the club house to the car park will be illuminated utilising column mounted luminaires. These column luminaires will be mounted on the car park areas at 3m high with 3000K colour temperature. The luminaires shall be IP65 rated with die-cast aluminium body.

These luminaires will be installed with a mini photocell and dimming output pre-set to dim between 12am to 6am.

The column luminaires will have an asymmetric light distribution specific for roads lighting and a backlight shield, so there will be low split light to the back of the columns.

Dimensions: 330mm W x 173mm H x 653mm D



D-Series – DSX0 by Holophane

In addition to the photocells and presence detectors (PIR's) all lighting circuits will incorporate a timer with an override switch.

3.2. Car Park Area

The car park area will be illuminated utilising column mounted luminaires. These column luminaires will be mounted on the car park areas at 8m high with 3000K colour temperature. The luminaires shall be IP65 rated with die-cast aluminium body.

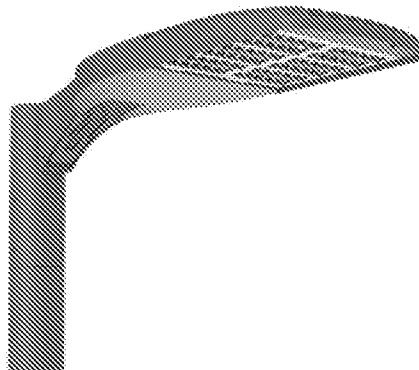
These luminaires will be installed with a mini photocell and dimming output pre-set to dim between 12am to 6am.

The column luminaires will have different light outputs according to their location. The column luminaires located on the west and east of the car park will have a forward throw light distribution and a backlight shield, so there will be low split light to the back of the columns.

The column luminaires located on the north side of the car park will have a forward throw light distribution and a backlight shield, so there will be low split light to the back of the columns.

The column luminaires located on the middle of the car park will have a symmetric light distribution, so there will be light in every direction of the luminaire.

Dimensions: 331mm W x 188mm H x 838mm D



D-Series – DSX1 by Holophane

The car park indicated by the orange area in the figure 1.3 will be illuminated by the overspill from the luminaires installed on the north side of the car park indicated by the green area in the figure 1.3.

In addition to the photocells all lighting circuits will incorporate a timer with an override switch.

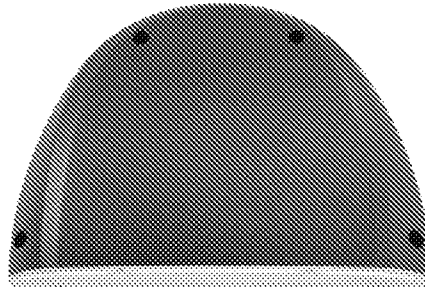
3.3. Driving Range Buggy Storage Area

The buggy storage area will be illuminated utilising wall mounted luminaires. These luminaires will be mounted on the external walls above the doors at 3m high with 3000K colour temperature. The luminaires shall be IP66 rated with die-cast aluminium body and frosted polycarbonate lens.

These luminaires will be installed with an integral 3 hour maintained emergency battery backup, a miniature photocell and a presence detector (PIR).

These luminaires will have a wide light distribution.

Dimensions: 340mm W x 235mm H x 182mmD



Kirium by DW Windsor

In addition to the photocells and presence detectors (PIR's) all lighting circuits will incorporate a timer with an override switch.

3.4. Green Keepers and Compound

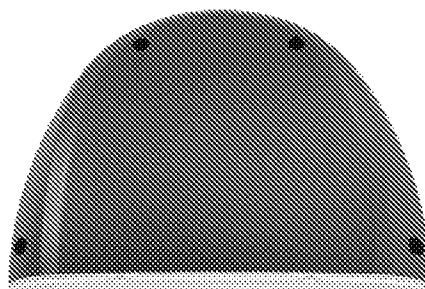
The green keepers building and compound will be illuminated utilising wall and column mounted luminaires.

The wall mounted LED luminaires will be mounted on the external walls above the doors at 3m high with 3000K colour temperature. The luminaires shall be IP66 rated with die-cast aluminium body and frosted polycarbonate lens.

These luminaires will be installed with an integral 3 hour maintained emergency battery backup, a miniature photocell and presence detector (PIR).

These luminaires will have a narrow light distribution.

Dimensions: 340mm W x 235mm H x 182mmD



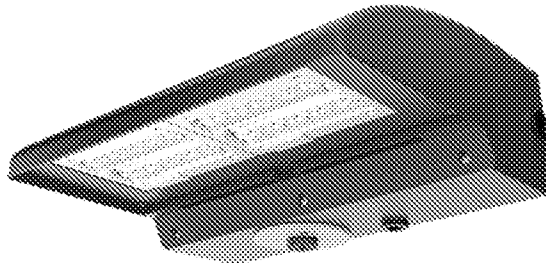
Kirium by DW Windsor

The wall mounted LED luminaires will be mounted at 5m high on the external walls located higher than the Kirium luminaires specifically to illuminate the compound with 3000K colour temperature. The luminaires shall be IP65 rated with die-cast aluminium body.

These luminaires will be installed with a photocell and an override switch. These luminaires can be turned on when required using the override switch.

These luminaires will have a forward throw light distribution.

Dimensions: 392mm W x 121mm H x 293mmD



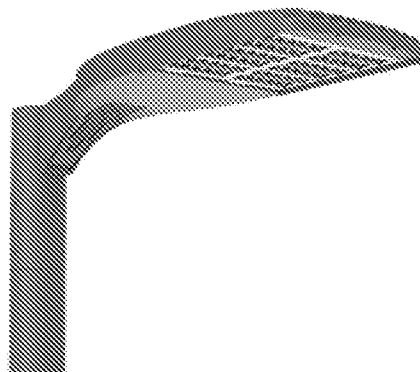
Wallpack by Holophane

The column mounted LED luminaires will be mounted on north boundary of the compound at 8m high with 3000K colour temperature. The luminaires shall be IP65 rated with die-cast aluminium body.

These luminaires will be installed with a mini photocell and dimming output pre-set to dim between 12am to 6am.

The column luminaires will have a forward throw light distribution and a backlight shield, so there will be low split light to the back of the columns.

Dimensions: 331mm W x 188mm H x 838mm D



D-Series – DSX1 by Holophane

In addition to the photocells and presence detectors (PIR's) all lighting circuits will incorporate a timer with an override switch.

3.5. Access Road to the Development

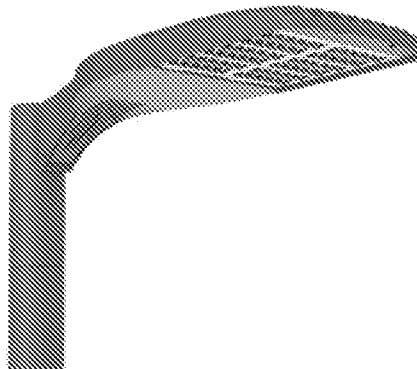
The access road to the development will be illuminated utilising column mounted luminaires. These column luminaires will be mounted along the roads and roundabout at ...6m high with 3000K colour temperature. The luminaires shall be IP65 rated with die-cast aluminium body.

These luminaires will be installed with a mini photocell and dimming output pre-set to dim between 12am to 6am.

The column luminaires will have different light outputs according to their location. The column luminaires located on the entrance of the development going to the club house and to the green keepers building will have an asymmetric light distribution specific for roads lighting and a backlight shield, so there will be low split light to the back of the columns.

The column luminaires located on the roundabout at the club house entrance will have a symmetric, asymmetric and forward throw light distribution, the columns will incorporate a back light shield excluding the column adjacent to the wheelchair accessible parking spaces where the back light element will assist in increasing illumination levels to the pedestrian areas.

Dimensions: 330mm W x 173mm H x 653mm D



D-Series – DSX0 by Holophane

4. LIGHTING CALCULATION

4.1. Surrounding Area

Within Appendix 1 the layout indicates the location of the luminaires along with the calculated lighting lux levels.

The calculation is modelled in a flat plane to simulate the worst-case scenario. The lighting levels are based on all the luminaires being at full output.

The luminaires were selected and located to prevent the spread of light in an upward direction and to limit the spill of light and glare beyond the site boundary.

The external lighting will cause no overspill out of the site boundary, as the buildings and car park is located away from the site boundary.

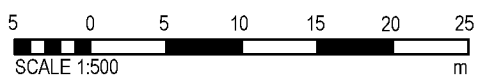
There are minimal lighting levels to the foliage at the north of the site and between the access road and car park as these have been highlighted as bat foraging routes.



APPENDIX 1 - PROPOSED LIGHTING LAYOUT AND CALCULATION



SYMBOL & REFERENCE	DESCRIPTION	LIGHT SOURCE	MODEL & MANUFACTURER
	IP66 wall mounted die cast aluminium luminaire with frosted polycarbonate lens and narrow light distribution, no upward light spill. Various housing colours available. Dimensions: 340mm W x 235mm H x 182mm D	3000K LED, 16LED 1339lumen 12W, 122lm/W 100,000hours	Kirium by DW Windsor
	IP66 wall mounted die cast aluminium luminaire with frosted polycarbonate lens and wide light distribution, no upward light spill. Various housing colours available. Dimensions: 340mm W x 235mm H x 182mm D	3000K LED, 16LED 1323lumen 12W, 122lm/W 100,000hours	Kirium by DW Windsor
	IP66 IK10 bollard mounted bollard with galvanised steel bodied and die cast aluminium head and powder coated finish, polycarbonate glazing and symmetrical light distribution Dimensions: 89mm diameter x 1000mm tall	3000K LED, 785lumens 12W, 65lm/W 100,000hours	Pharola Bollard by DW Windsor
	IP66 IK10 aluminium column with powder coated finish and UV stabilised opal PMMA diffuser. Various housing colours available. Dimensions: 170mm diameter x 2000mm H (500mm head, 1400mm body)	3000K LED, 1760lumens 29W, 61lm/W 50,000hours	Silka by DW Windsor
	IP65 die cast aluminium housing with fins for thermal management, PMMA optic with asymmetrical light distribution, no upward light spill. Mounted on a 3m column. Various housing colours available. Dimensions: 653mm L x 330mm W x 173mm D	3000K LED, 2000lumen 15W, 133lm/W 100,000hours	D Series 1 (DSX0) by Holophane
	IP65 die cast aluminium housing with fins for thermal management, PMMA optic with asymmetrical light distribution and back light shield, no upward light spill. Mounted on a 6m column. Various housing colours available. Dimensions: 653mm L x 330mm W x 173mm D	3000K LED, 5000lumen 37W, 135lm/W 100,000hours	D Series 1 (DSX0) by Holophane
	IP65 die cast aluminium housing with fins for thermal management, PMMA optic with forward throw light distribution, no upward light spill. Mounted on a 6m column. Various housing colours available. Dimensions: 653mm L x 330mm W x 173mm D	3000K LED, 5000lumen 37W, 135lm/W 100,000hours	D Series 1 (DSX0) by Holophane
	IP65 die cast aluminium housing with fins for thermal management, PMMA optic with forward throw light distribution and back light shield, no upward light spill. Mounted on a 6m column. Various housing colours available. Dimensions: 653mm L x 330mm W x 173mm D	3000K LED, 5000lumen 37W, 135lm/W 100,000hours	D Series 1 (DSX0) by Holophane
	IP65 die cast aluminium housing with fins for thermal management, PMMA optic with forward throw light distribution and back light shield, no upward light spill. Mounted on an 8m column. Various housing colours available. Dimensions: 838mm L x 331mm W x 188mm	3000K LED, 8000lumen 64W, 125lm/W 100,000hours	D Series 1 (DSX0) by Holophane
	IP65 die cast aluminium housing with fins for thermal management, PMMA optic with symmetrical light distribution, no upward light spill. Mounted on an 8m column. Various housing colours available. Dimensions: 838mm L x 331mm W x 188mm D	3000K LED, 8000lumen 64W, 125lm/W 100,000hours	D Series 1 (DSX0) by Holophane
	IP65 die cast aluminium wall mounted bulkhead luminaire, optic with forward throw light distribution, no upward light spill. Mounted at 5m AFFL. Various housing colours available. Dimensions: 392mm L x 293mm W x 121mm D	3000K LED, 9000lumen 81W, 12116lm/W 100,000hours	Wallpack by Holophane
	IP65 IK08 surface mounted down light with die cast aluminium housing and powder coated finish, clear toughened glass with very wide light distribution comprising 100% downward light, no upward light spill. Mounted at 2.8m AFFL. Dimensions: 160mm diameter x 262mm H (261mm D, 202mm wall fixing plate)	3000K LED, 2735-3494lumen 39W, 70-90lm/W	Jet 33 by Ligman
	IP65 IK08 recess downlight with die cast aluminium body and powder coated finish, 6mm thick front ring in stainless steel with wide light distribution and remote driver (175mm recess depth for driver). Dimensions: 200mm diameter x 124mm H	3000K LED, 2689-3144lumen 29W, 93-108lm/W	Nikon 3 by Ligman



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A		UPDATED TO ECOLOGISTS COMMENTS	07/02/2022	GE	PC
B		PLANNING	26/01/2022	GE	PC
REV		DESCRIPTION	DATE	BY	CHKD
ORIGINATOR:					
RIDGE PROPERTY & CONSTRUCTION CONSULTANTS FAST REPAIR HOUSE WINDSOR ROAD WINDSOR WINDSOR Tel: 01628 554400 WWW.RIDGE.CO.UK					
CLIENT:					
HALLAM LAND					
IN ASSOCIATION WITH:					
PROJECT:					
BOGNOR REGIS GOLF COURSE					
TITLE:					
EXTERNAL LIGHTING					
DRAWN BY:		GE	SCALE:	1:500	BY AD
CHECKED BY:		PC	DATE:	26/01/2022	
STATUS:					
PLANNING					
DRAWING No:					
PROJECT:	ORD:	ZONE:	LEVEL:	TYPE:	ROLE:
5017354	RDG	XX	ST	PL	E
					NUMBER:
					3700
					REV:
					A



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