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QUEEN ALEXANDRA HOSPITAL MSCP

PROPOSED LIGHTING DESIGN

Client

Noviniti

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british parking awards
2018 WINNER

british parking awards
2019 FINALIST

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1.0 General

The lighting installations shall be designed to comply with BSs 5489, 12464 and 7671 plus CIBSE Guidelines, relevant lighting design guides, including The Institution of Lighting Engineers guidance note on the Reduction of Obtrusive Light, IStructE and Park Mark Standards (Secure by Design).

The emergency lighting designs shall be in compliance with BS 5266, ensuring adequate emergency lighting is provided, particularly to the staircase areas and pedestrian walkways / escape routes. Emergency lighting luminaires to have a minimum of 3 hours illumination time and be self testing.

The emergency escape lighting system shall include illuminated directional signage luminaires.

The car park lighting luminaires shall be fitted with LED light sources and be suitable for exterior use in an open sided car park environment.

The car park lighting luminaires shall be controlled by solar and movement sensors by the use of individual luminaire wireless control sensors.

The general illumination levels throughout the car park shall be as the following table:

Area	E (average) / Lux	E (Min)/ Lux	
Parking Bays, Access Lanes	75	50	
Disabled Parking	300		
Ramps, Corners, Intersections	150	100	Internal
Ramps, Corners, Intersections	30	12	External
Vehicular Entrance / Exit Zones	300	120	Day
Vehicular Entrance / Exit Zones	75	50	Night
Pedestrian Areas, Stairs, Lift Lobbies	100	50	Including external walkways
Open Air Roof Level	30	12	Night
New Road	50	20	Night
External Pedestrian ramps and steps	50	20	Night

Uniformity E (min) to E (ave) to be greater than 0.4

Emergency lighting throughout shall be a minimum of 1 Lux.

The top deck and external luminaires shall be mounted on proprietary galvanised steel lamp posts with tamper proof access hatches and hinged for ease of maintenance. The locations shall be as generally indicated on the drawings

The post mounted luminaires will be 3M in height from the top deck / floor level.

2.0 Luminaire Specification

The specification of the luminaires to be used shall be compliant to the below.

External luminaires shall have minimum ratings of IP65 and IK8.

Luminaires in external areas shall have zero upward light output.

All Luminaires shall be fitted with LED lighting sources and control sensors as required.

External luminaires shall be manufactured from anti-corrosive material (die cast aluminium / glass reinforced plastic body) and shall be impact resistant.

Luminaires shall have a colour temperature of 4,000k and a minimum efficacy of 110 lm/W.

Luminaires shall have a 5 year guarantee and have a minimum of 60,000 hours life span.

Luminaires shall be available with emergency lighting packs and neon indicators.

3.0 Lighting Control (Individual Luminaire Control)

Each luminaire, or group of luminaires are to be fitted with the necessary control sensors and equipment in order that they can be controlled in order to minimise energy consumption whilst maintaining appropriate lighting / illuminance levels.

The general lighting control concept within the MSCP is to prevent the luminaires being on when there is sufficient ambient light and when no movement is detected within the car parking and walkway areas with the ability to dim down, rather than turn off, to maintain adequate safe and secure lighting levels.

The lighting control methodology will be agreed during the detailed design process and prior to luminaire procurement, but it is anticipated that the methodology would be similar to the following:

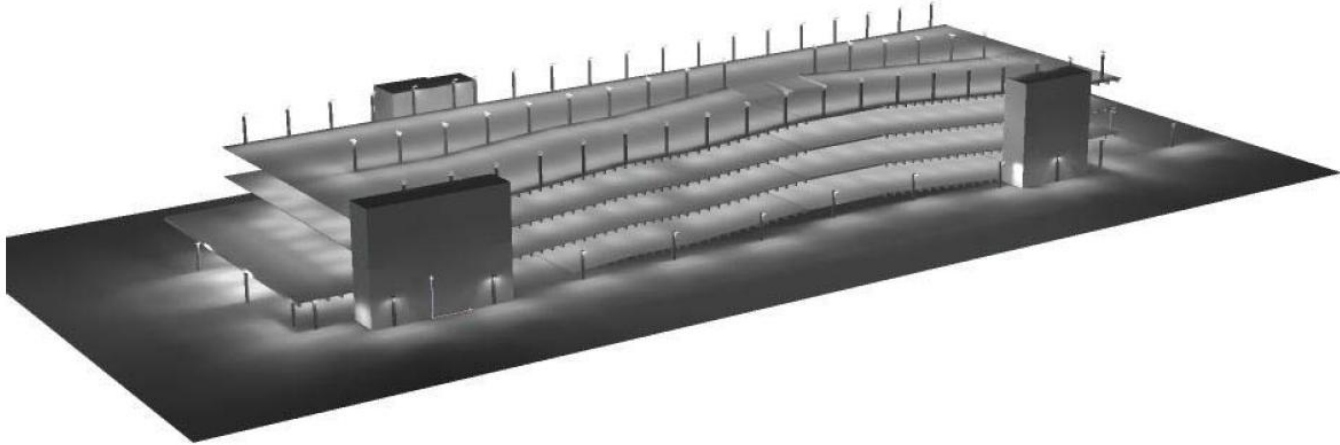
When movement sensors are activated, either by vehicles or pedestrians, and the ambient lighting level is low, the luminaires will turn on in the designated area. After a given period when no movement is sensed, say 5 minutes, the luminaires will dim down to 50% output. After a further 5 minutes the luminaires will switch off.

If the ambient light is sufficient the luminaires will not turn on even if movement is detected.

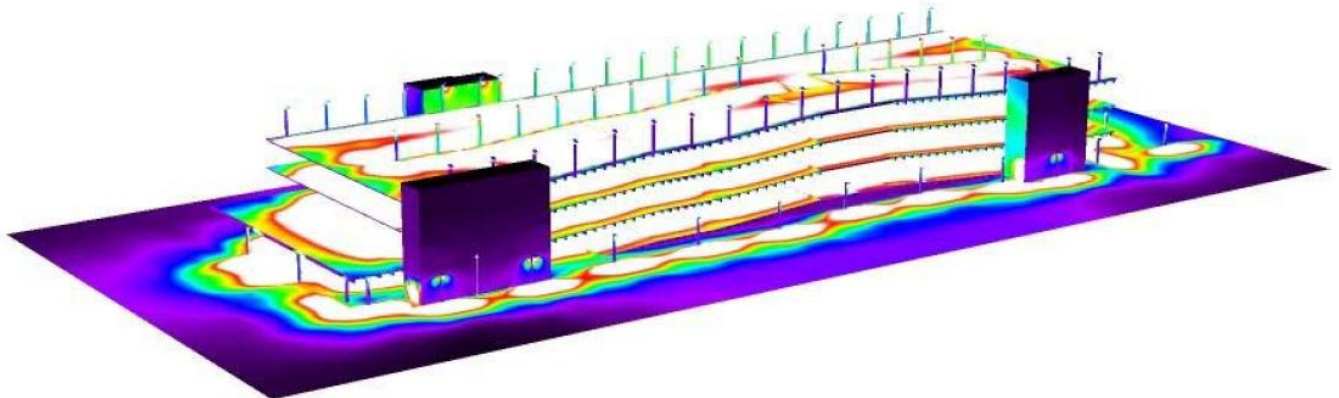
On staircase areas the luminaires will dim down to 10% rather than turning off completely.

4.0 Indicative Design

3D Rendering:



3D False Colour Rendering:



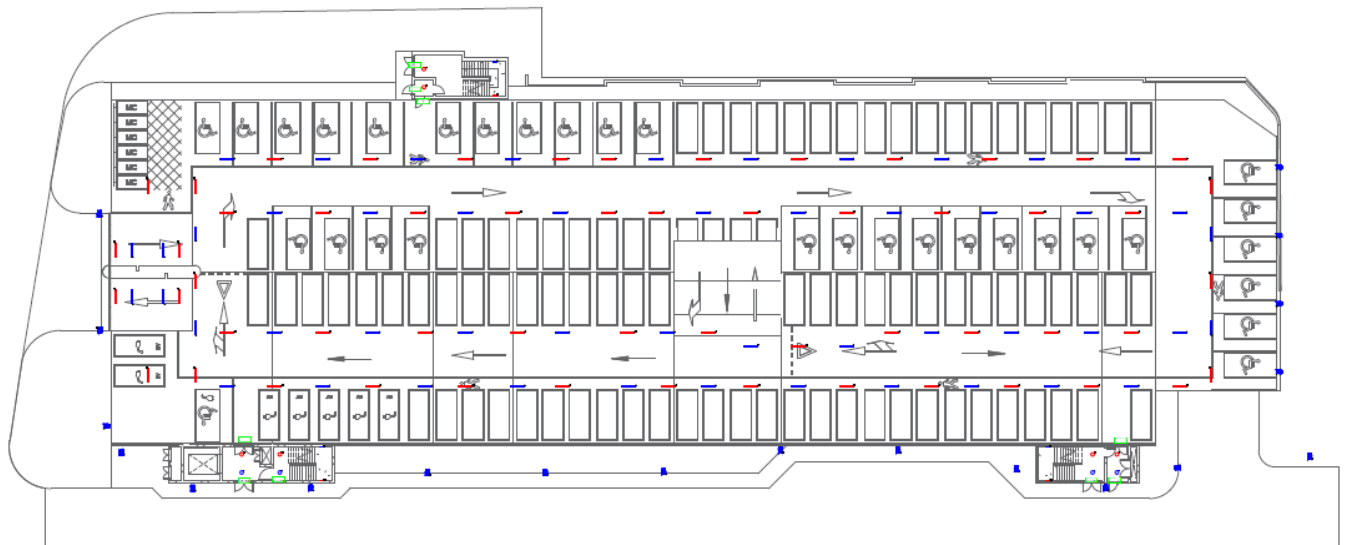
0 6.25 12.50 18.75 25 31.25 37.50 43.75 50

lx

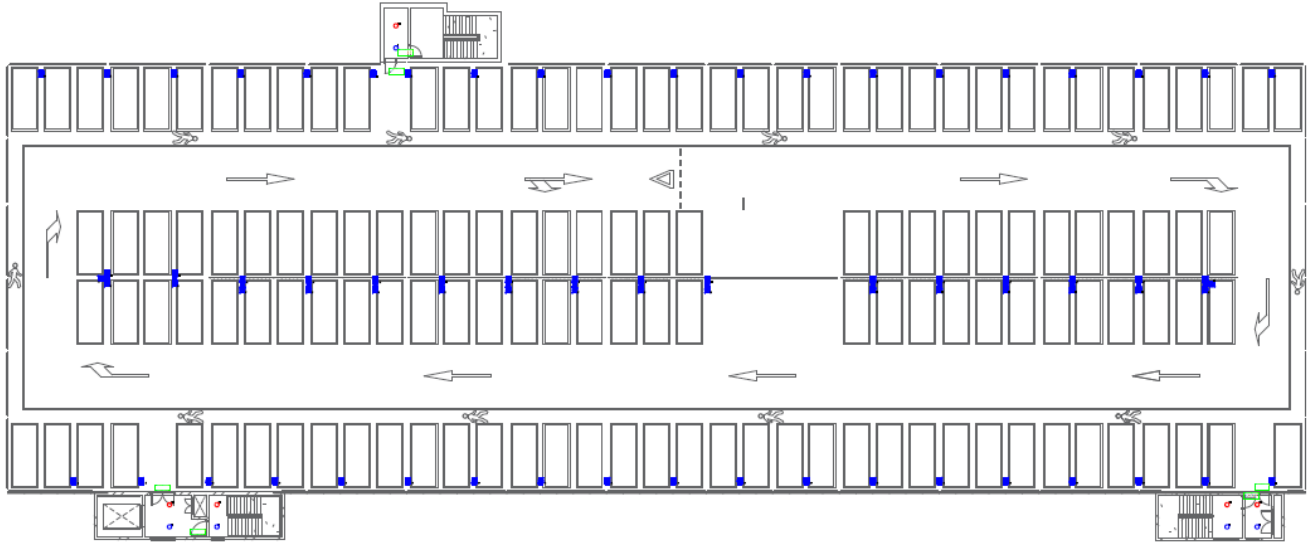
Illuminance Levels around the perimeter

Designation	Type	Eav [lx]	Emin [lx]	E _{max} [lx]
West 1M	Vertical	26	7.70	49
West 3M	Vertical	24	7.79	47
West 10M	Vertical	16	7.42	30
East 1M	Vertical	56	11	157
East 3M	Vertical	45	12	90
East 10M	Vertical	27	11	51
North 1M	Vertical	32	13	50
North 3M	Vertical	28	12	48
North 10M	Vertical	18	9.52	28
South 1M	Vertical	38	14	67
South 3M	Vertical	33	14	61
South 10M	Vertical	21	19	36
5-10M Boundary	Perpendicular	8.95	1.32	82

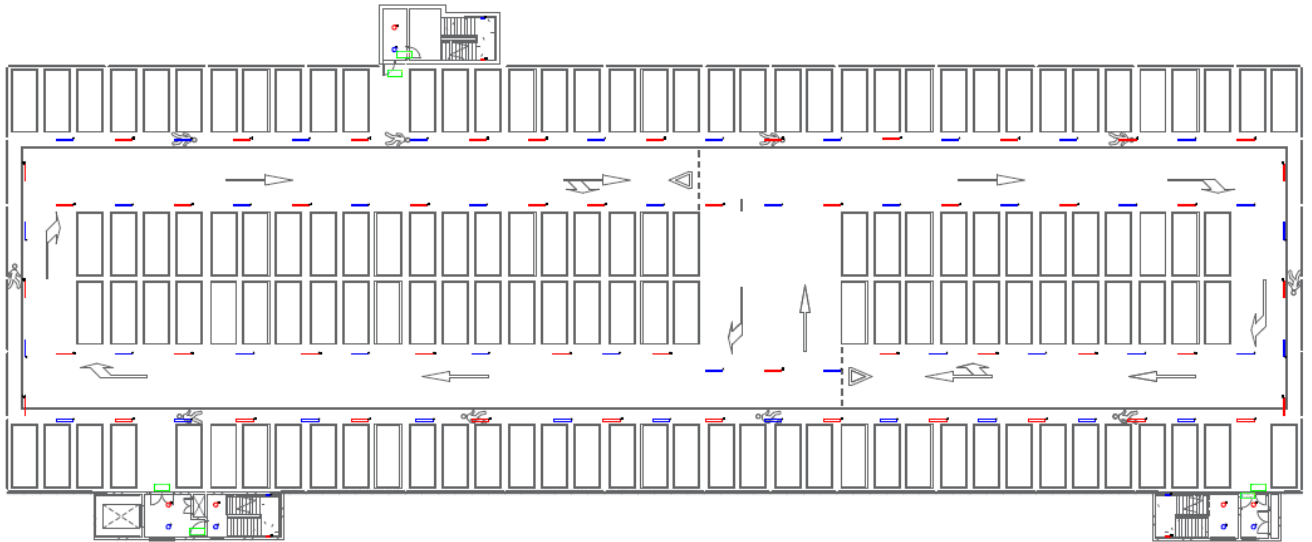
Ground Floor / External:



Top Deck (Open Air):



Intermediate Floor:



Luminaire Data Sheets: - Top Deck and External

514062160

O52



O52-340 LED 4500 HF 840 WBA

EAN-nr: 8019455621601

Stock code: M

A slim LED floodlight for street and urban lighting. Manufactured with luminaire housing in diecast aluminium with polyester powder coated paint finish. The optical system is a combination of lenses and reflectors in silver coated aluminium. Supplied with tempered safety glass cover. The luminaire has silicone gasket and all screws are in stainless steel.



Light technical data

Light source	LED
Colour rendering and colour temperature	CRI>80, 4000K
Lumen/Watt	104
MacAdam step	4
Luminous flux decline (LLMF) 50000h Ta25	0.95
Median useful life (EN 62717) Ta25	100000h L90B50
Median useful life (EN 62717) Max Ta	100000h L80B50
Lumen Out	4350
L90B50 Median useful life (EN 62717) Ta25 (hr)	100000
Median useful life (EN 62717) L80 MaxTa (h)	100000

Technical data

Maximum ambient temperature (°C)	50
IP classification	66
IK Classification	9
Minimum ambient temperature (°C)	-30
Corrosion class	C4

Optic

Material of reflector	Aluminium
Material of diffuser	Glass tempered
Lightdistribution Up/Down	0/100
Optic	WBA = Wide beam optic for street and pathway lighting

Electrical data

Maximum voltage (V)	240
Maximum frequency (Hz)	60
Minimum frequency (Hz)	50
Voltage from (V)	220
Number of luminaires on a 16A MCB type B (80% load)	25
Total consumption (W)	42
Number of luminaires on a 16A MCB type C (80% load)	42
Number of luminaires on a 10A MCB type B (80% load)	15
Number of luminaires on a 10A MCB type C (80% load)	26

Dimensions

Net weight (kg)	6,8
Height (mm)	247
Length (mm)	497
Width (mm)	346
Gross weight (kg)	7,34

Ballast

Type of Ballast	HF = High frequency
Number of ballast	1
Protection against surges (kV)	10

Body

Body material	Aluminium
Colour of body	Silver grey

Internal Linear (Car Park Decks)

I40L43484

i40



i40-1200 LED 4400 DALI E3/ST 840 CMW-SEN TW

EAN-nr: 4741145314954

Stock code: C

A versatile and robust luminaire which makes it suitable in a range of demanding areas. The luminaire is produced in recyclable polycarbonate. i40 is easily mounted to the ceiling, wall, track or horizontal wire.



Electrical data	
Voltage from (V)	230
Maximum voltage (V)	240
Maximum frequency (Hz)	60
Minimum frequency (Hz)	50
Total consumption (W)	33
Number of luminaires on a 16A MCB type B (80% load)	19
Number of luminaires on a 16A MCB type C (80% load)	31
Number of luminaires on a 10A MCB type C (80% load)	19
Number of luminaires on a 10A MCB type B (80% load)	11
Leakage Current (mA)	0,4
Dimensions	
Height (mm)	101
Length (mm)	1277
Width (mm)	101
Net weight (kg)	2,8
CCmax (mm)	800
Gross weight (kg)	3,04
Technical data	
IP classification	66
Maximum ambient temperature (°C)	30
IK Classification	8
Termination	
Type of through wiring	5-pole-2,5
Number of cable entries	2
Termination	5x2x2.5mm ² Push In terminal
Sensor information	
Max mounting height / detection range (metre)	5
Sensor type	Microwave

Light technical data	
Light source	LED
Colour rendering and colour temperature	CRI>80, 4000K
Luminous flux decline (LLMF) 50000h Ta25	0.90
MacAdam step	3
Lumen/Watt	135
Lumen Out	4443
Median useful life (EN 62717) Ta25	100000h L80B50
Median useful life (EN 62717) Max Ta	100000h L80B50
L80B50 Median useful life (EN 62717) Ta25 (hr)	100000
Median useful life (EN 62717) L80 MaxTa (h)	100000
Ballast	
Number of ballast	1
Type of Ballast	DALI
Minimum dimming level (%)	1
Wiring Options	CMW-SEN
Emergency	
Duration in battery mode (hrs)	3 hours
Type of emergency	ST = Self test
Output in battery mode (%)	10
Optic	
Material of diffuser	Polycarbonate
Lightdistribution Up/Down	10/90
Communication	
Communication protocol	Wireless
Wireless bandwidth/protocol	868MHz
Remarks	
Special Certifications	D-mark
Product category	

Circular Internal (Staircases / Lobbies)

CLX363879

CORRILUX® 260C/360C



CORRILUX-S360 2600 DALI-WR E3/ST-W 840

EAN-nr: 5056403638796

Stock code: M

A discreet round IP65 rated high efficiency and low wattage surface mounted LED luminaire with high transmission satin acrylic diffuser.



This is a sample image. This item may be of a different colour or otherwise differ from the image displayed.



Electrical data	
Maximum voltage (V)	240
Maximum frequency (Hz)	60
Minimum frequency (Hz)	50
Voltage from (V)	220
Total consumption (W)	23
Number of luminaires on a 16A MCB type B (80% load)	28
Number of luminaires on a 16A MCB type C (80% load)	47
Number of luminaires on a 10A MCB type B (80% load)	17
Number of luminaires on a 10A MCB type C (80% load)	29
Dimensions	
Net weight (kg)	2,3
Diameter (mm)	360
Height (mm)	82
Gross weight (kg)	2,74
Ballast	
Number of ballast	1
Minimum dimming level (%)	1
Type of Ballast	DALI-WR = Wireless ready
Wiring Options	Em CMW-SEN
Optic	
Optic	OP = Opal
Material of diffuser	Acrylic
Lightdistribution Up/Down	5/95
Communication	
Communication protocol	Wireless
Wireless bandwidth/protocol	868MHz

Light technical data	
Light source	LED
Colour rendering and colour temperature	CRI>80, 4000K
MacAdam step	3
Lumen/Watt	111
Median useful life (EN 62717) Ta25	70000
Lumen Out	2550
Luminous flux decline (LLMF) 50000h Ta25	91
Emergency	
Duration in battery mode (hrs)	3 hours
Output in battery mode (%)	13
Type of emergency	Self testing with wireless communication (ST-W)
Emergency lumen output	350
Technical data	
Maximum ambient temperature (°C)	25
IP classification	65
Minimum ambient temperature (°C)	5
Body	
Colour of body	White
Body material	Polycarbonate
Sensor information	
Sensor type	Microwave
Max mounting height / detection range (metre)	6
Termination	
Termination	3x2x2.5mm ² Push In terminal