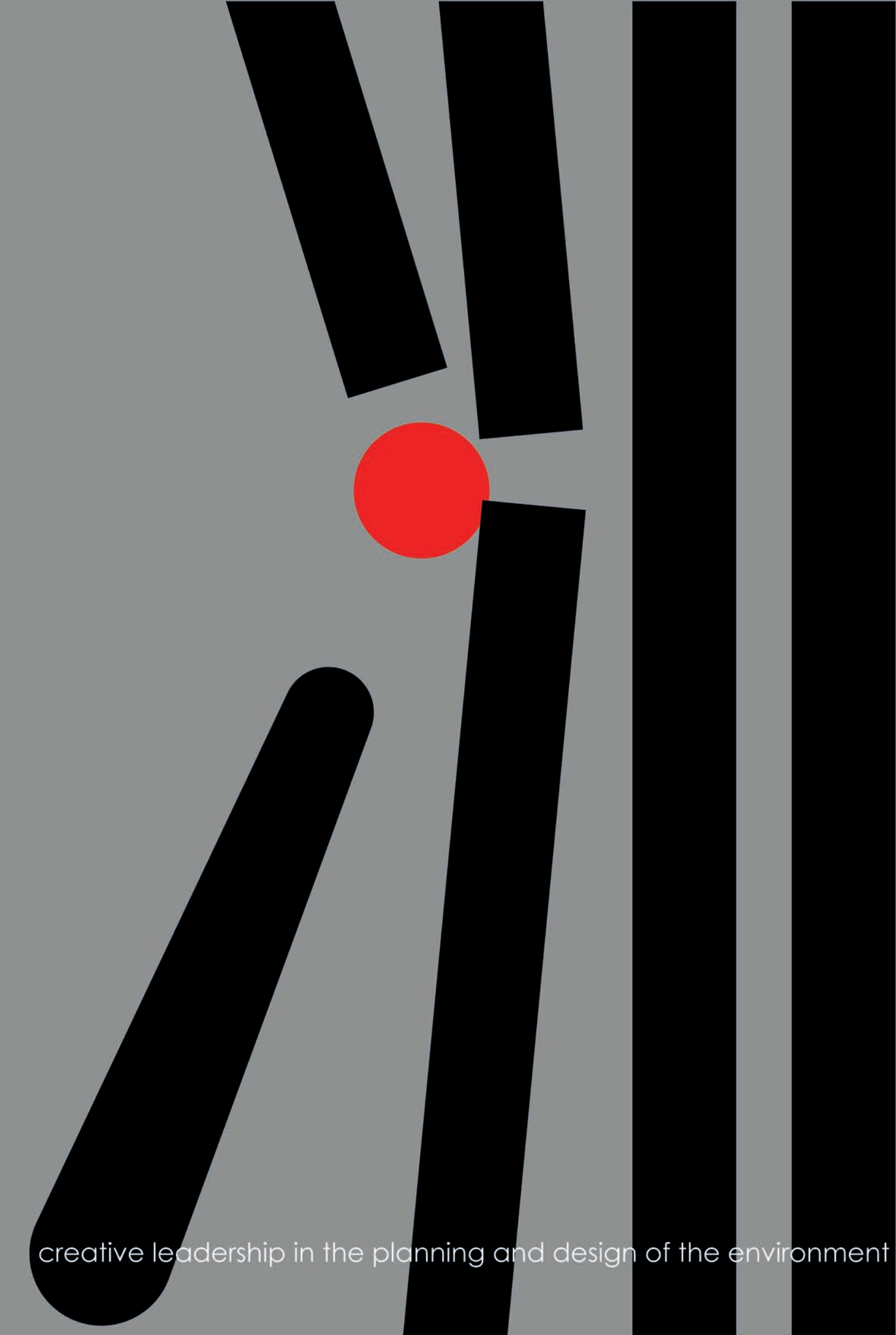




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The University of Manchester
The Old Quadrangle

Lighting Strategy Report

UMOQ-ITR-VV-XX-RP-L-2040

29th February 2024

P02

creative leadership in the planning and design of the environment



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1 The Existing Old Quadrangle

The Old Quadrangle at the University of Manchester is one of the most important, prestigious and historic public spaces in the city and has the potential to become an internationally recognised space.

It sits within a collection of beautiful heritage buildings including the Beyer Building, Whitworth Hall, Manchester Museum, John Owens and Christie buildings. These buildings, constructed between 1838 and 1909 were the earliest building that went on to form the modern University of Manchester campus. The Whitworth Building and Whitworth Hall have a significant presence on Oxford Road with the Queens Arch entrance into the Old Quadrangle courtyard.

The Old Quadrangle space itself, defined by the historic buildings, has had differing layouts since its formation, most recently a car park.

The Social Responsibility policies of the University of Manchester reflect contemporary concerns over climate change and the related need to act in a sustainable way. These have seen the Old Quads use change in recent years with the regular car parking removed from it.

The University of Manchester have identified this space as the location for the project to mark the Bicentenary of its formation.

The University of Manchester Estates team developed a brief to create a heart space within the campus. To form a space which accommodated the wide range of events and activities undertaken in the Old Quad, while seamlessly blending into a softer, gardenesque space while not in 'event mode'.

The proposal has been developed to reflect the University's history, however the focus is to provide an innovative and exemplar space that marks the Bicentenary and reflects the forward looking nature of the University of Manchester.



2 The Design Proposal - The Ellipse

Legend:

- 1. Queens Arch
- 2. Museum Building
- 3. Whitworth Hall
- 4. Christie Building
- 5. John Owens Building
- 6. Beyer Building
- 7. The Old Quad Ellipse
- 8. Central Formal Lawn
- 9. Existing Boulder on Raised Plinth
- 10. Beyer Building Boston Ivy Facade
- 11. Feature Seating / Interpretation Ellipse
- 12. Structured ornamental planting
- 13. Habitat Creation Opportunity
- 14. Informal Seating Space
- 15. Bench Seating to Museum Building
- 16. Cycle Parking
- 17. Accessible Parking Spaces
- 18. Accessible Drop-off Bay
- 19. Bin Storage
- 20. Delivery Drop-off Bay
- 21. Wayfinding / Signage Opportunity



3 The Lighting Strategy

Lighting within the existing Old Quad is provided by the building mounted lanterns highlighted on the adjacent plan in pink.

The existing lighting scheme and lighting levels are significantly below standard requirements and form a generally dark space.

With the enhanced function of the space created in line with proposals, the lighting strategy needs to be suitably functional and high quality to provide a safe and secure environment, while highlighting key features of the space and its architectural context.

A lighting design has been developed as presented on this page. Lux levels have been reviewed to ensure appropriate lighting levels throughout the space.

The lighting strategy is formed of five different lighting types. The main coverage of the space will be by the existing lanterns, which are to be enhanced where necessary to provide more functional light, low level 'bollard' type lighting to footways and 5m column mounted lighting to the central Ellipse and footpaths.

Due to the importance of the architecture forming the space, the University and design team see it as essential to provide lighting to the buildings. This will be achieved by integrating uplighters at ground level, to ensure no additional building mounted lighting is proposed.

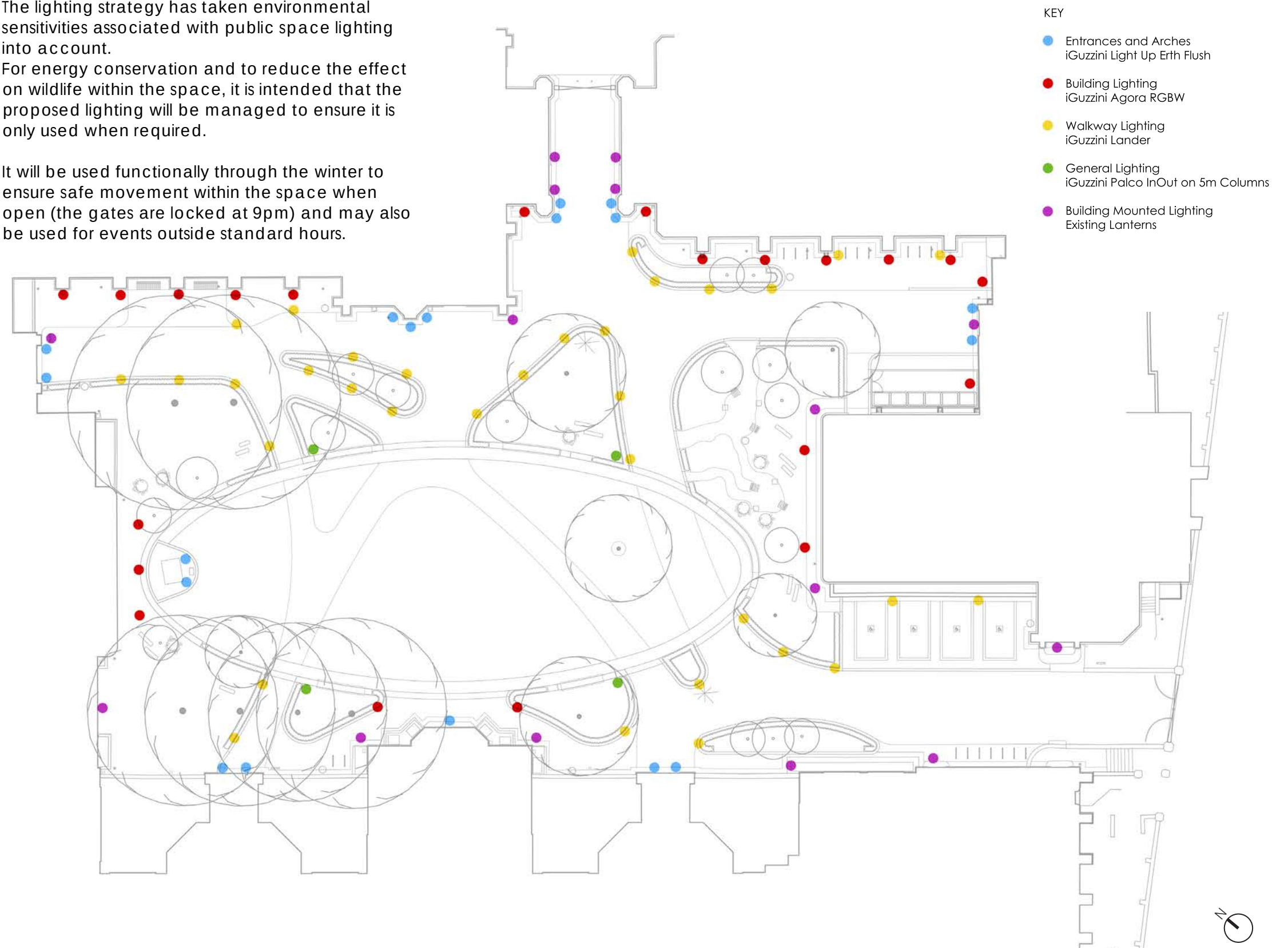
Lighting for the Old Quad space pedestrian areas is provided by downlighters to provide the most even surface coverage, reducing potential difficulties for people with light / contrast related vision issues.

Uplighters are generally offset from main pedestrian routes and angled toward the building to minimise glare, with in-ground uplighters proposed at building entrances offset from the main route of movement.

The lighting strategy has taken environmental sensitivities associated with public space lighting into account.

For energy conservation and to reduce the effect on wildlife within the space, it is intended that the proposed lighting will be managed to ensure it is only used when required.

It will be used functionally through the winter to ensure safe movement within the space when open (the gates are locked at 9pm) and may also be used for events outside standard hours.



4 Lighting Visualisations



Aerial view of the Old Quad proposal with lighting



View from the Alcove seating to the John Owens / Christie facades



View from the Burlington Street access toward Beyer



View to the Beyer from the southern end of the Ellipse



View from the Queen's Arch to the Christie entrance and Christie facade



View of the John Owens elevation



View to the Queen's Arch, Whitworth Hall and Christie from the north west of the Ellipse



View to the Queen's Arch from the Ellipse



View to the Queen's Arch from the Ellipse with temporary coloured lighting

5 Lighting Specification

Lighting Element Location, Number and Specification

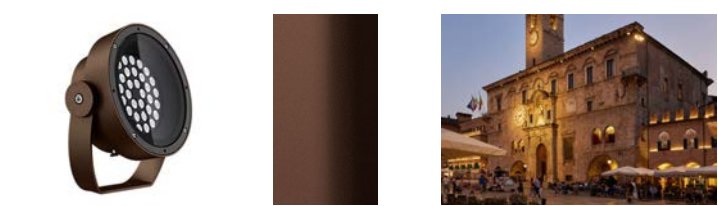
Entrances and Arches:

iGuzzini 'Light Up Earth' flush - Steel
18no



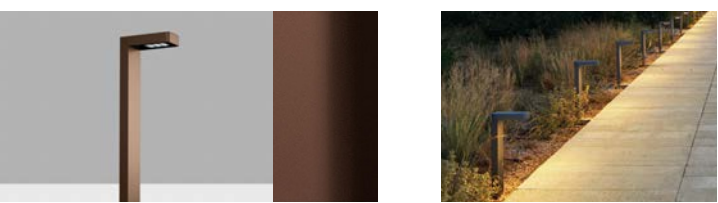
Building Lighting:

iGuzzini 'Agora RGBW' - Brown
21no



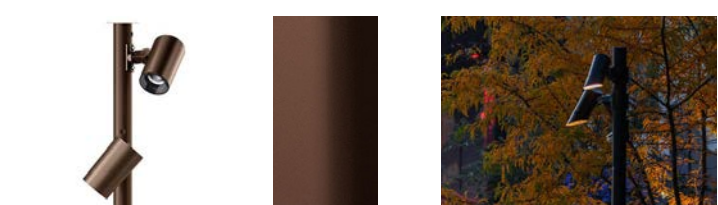
Walkway Lighting:

iGuzzini 'Lander' - Brown
33no



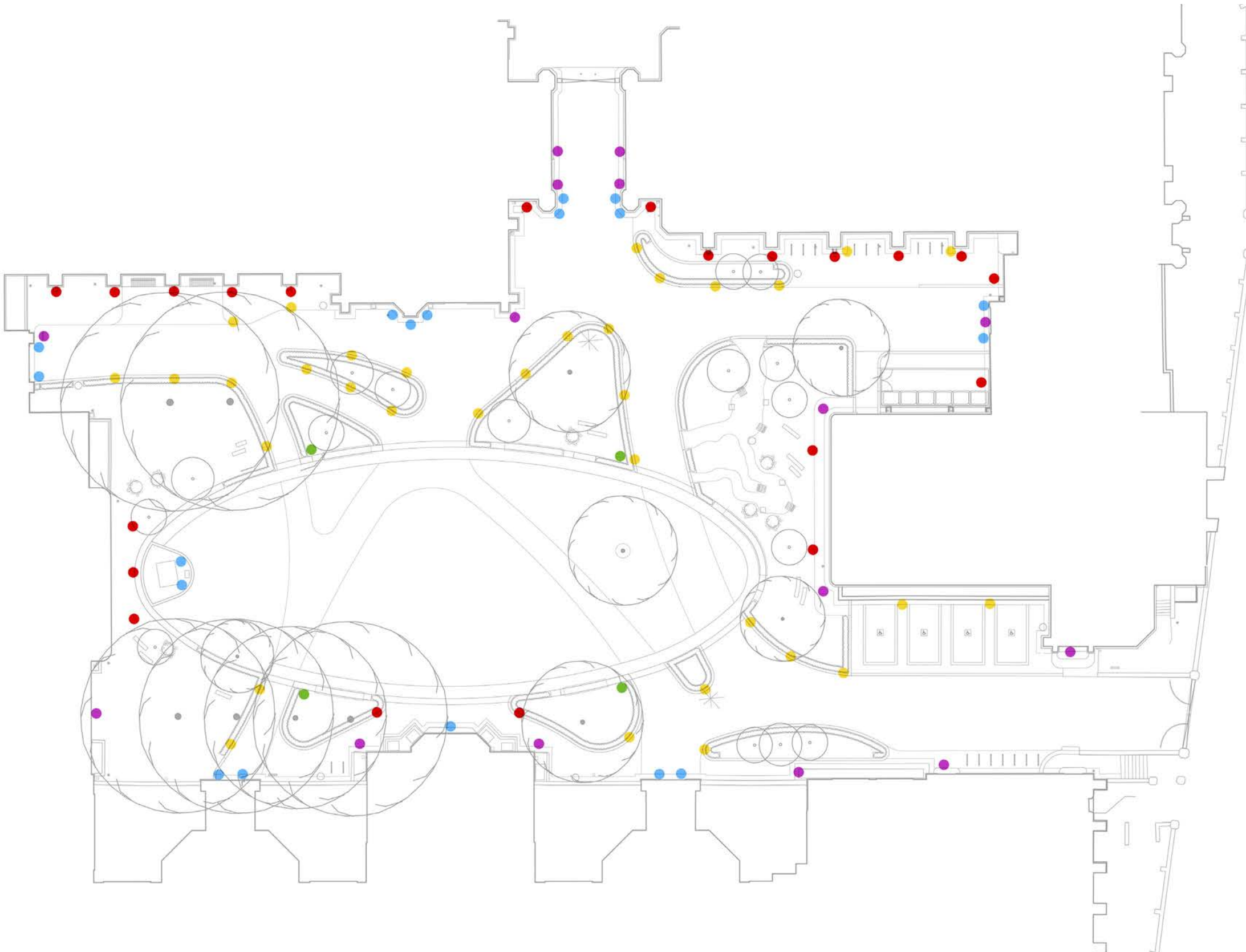
General Lighting:

iGuzzini 'Palco InOut' on 5m columns - Brown
4 columns, 8no luminaires



Existing lighting:

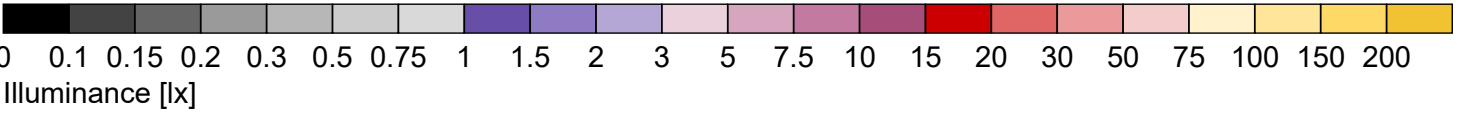
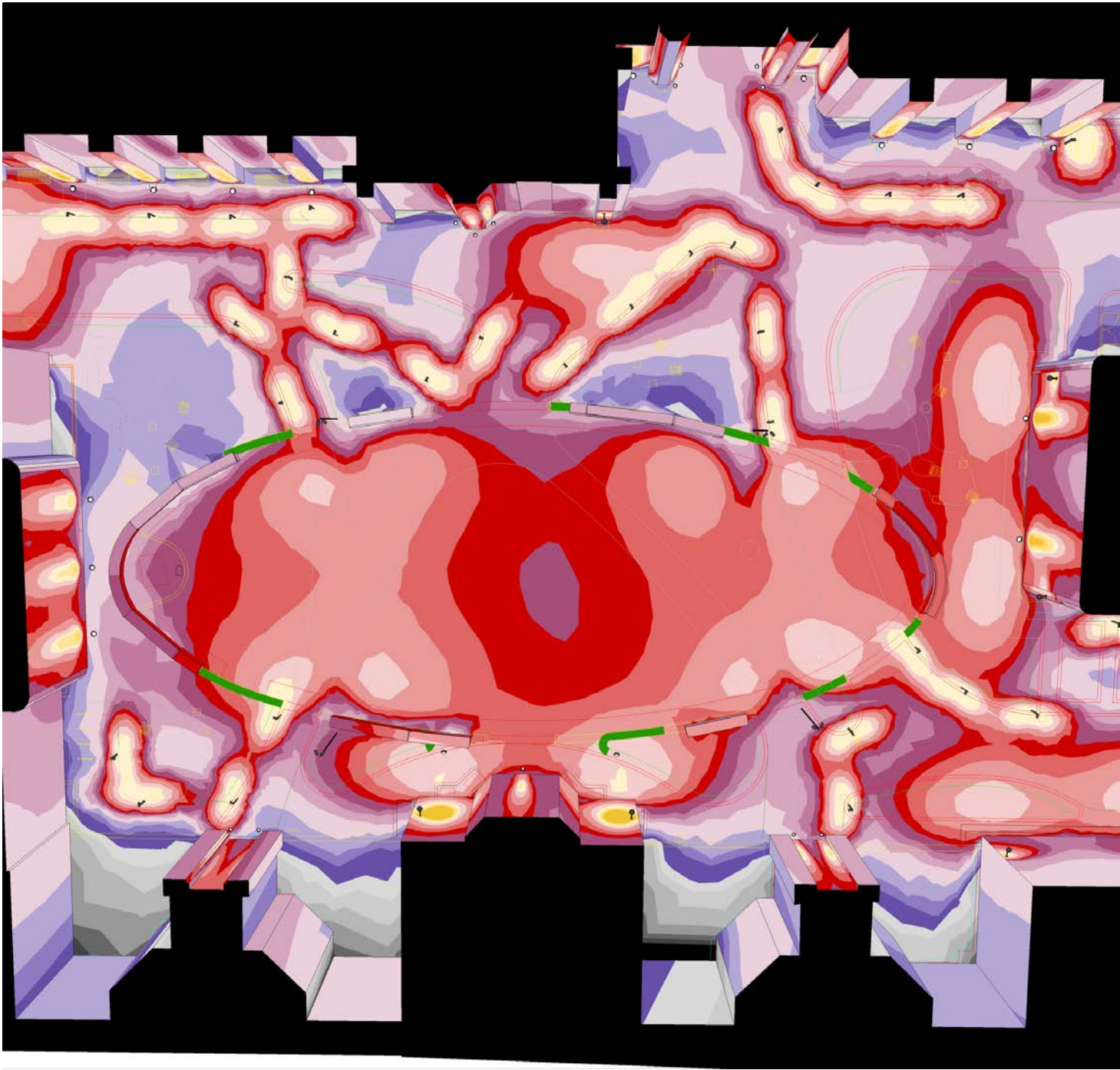
Existing lanterns to be enhanced
15no



Lux levels have been calculated by the lighting manufacturer based on the product specification selected.

The diagram includes all new lighting within the space, but does not include existing lantern lighting and light spill from external sources.

The diagram illustrates the even coverage achieved by the walkway lighting proposals throughout the space.



Object : Lander / Agora / Palco In Out.
Installation : Open Areas
Project number : Old Quadrangle Manchester University
Date : 05.02.2024



1 Luminaire data

1.1 iGuzzini, Light Up Earth - flush frame (ER23_X488)

1.1.1 Data sheet

Manufacturer: iGuzzini

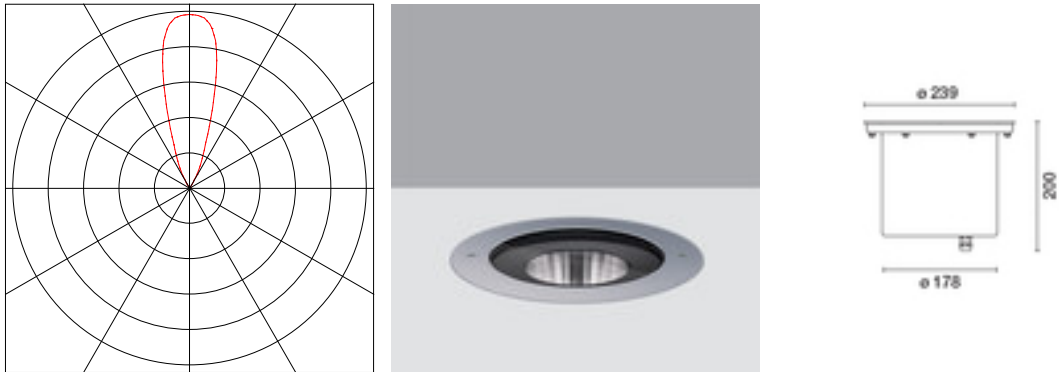
ER23_X488 Exteriors - Recessed luminaires Light Up Earth - flush frame

ER23 :
Recessed luminaire applicable to the floor or ground, designed for fitting monochrome white LED sources, for illumination, fixed optic, with DALI dimmable incorporated electronic control gear. The round frame has a diameter D=239 mm; the body and frame are made of AISI 304 stainless steel with sodium-calcium extra clear glass, thickness 15 mm. Stainless steel body coated with black paint. The luminaire is fixed to the outer casing by means of two TORX-type screws that ensure proper anchoring. Inclusive of LED circuit, OPTI BEAM aluminium reflector and black plastic cover. The product is wired using an A2 stainless steel cable gland, with type A07RNF 4x1 mm² outgoing power cord having L=1191 mm. The cable is equipped with an anti-transpiration device (IP68) consisting of a silicone seal placed on the power cable and housed inside the product. The outer casing for installation can be ordered separately from the plastic optical assembly. The assembly made up of the frame, optical assembly and outer casing guarantees 5000 kg resistance to static loads. Maximum glass surface temperature is lower than 40°C.

X488 :
Made of plastic (polypropylene). Inclusive of front cap with system for extracting the cables and double cable entry.

ER23.13 - Recessed luminaire Earth D=239 mm - Flush-mount stainless steel frame -Warm White - Flood optic - DALI - 21W 2374.1lm - 3000K - Steel
X488.04 - Outer casing in plastic for the ground, floor with stainless steel ring + closure cap - Black
C98L - Lamp LED Warm White CRI>80

Luminaire data		Equipped with	
Luminaire efficiency	: 78%	Quantity	: 1
Luminaire efficacy	: 113.29 lm/W	Designation	: LED Warm White CRI>80
Classification	: E04 ↓0.0% ↑100.0%	Power	: 18 W
CIE Flux Codes	: 0 0 0 0 78	Colour	: 3000
UGR 4H 8H	: - / -	Luminous flux	: 3050 lm
Power	: 21 W	Colour reproduction	: 80
Luminous flux	: 2379 lm		
Dimensions : Ø250 mm x 0.0 mm			



Object : Lander / Agora / Palco In Out.
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1 Luminaire data

1.6 iGuzzini, Agorà - Compact - ø254mm (UG72)

1.6.1 Data sheet

Manufacturer: iGuzzini

UG72 Exteriors - Floodlights Agorà - Compact - ø254mm

UG72 :
Spotlight designed to use LED lamps and a Spot optic. Consists of a die-cast aluminium optical assembly, bracket and box for the ballast with a clear tempered sodium-calcium safety glass cover. The luminaire is fitted with a double cable gland for pass-through wiring. The optical assembly can be adjusted on a horizontal plane at an angle between -50° / +90°. Agorà is fitted with a graduated scale and mechanical locking device for positioning. The Opti Beam Lens optical system comes complete with a Warm White monochrome LED circuit. The electronic DALI ballast is integrated in the product and compatible with remote management systems. Compatible with programming systems via DALI terminals or an NFC system. Both indoor (diffuser glass covers, lamellar louvers and refractors for elliptical light) and outdoor accessories (cylindrical screens, visors and protective grilles) can be used. All external screws used are made of A2 stainless steel.

UG72.15 - Spotlight with bracket - Warm White LED - Integrated Ballast - Spot optic - Ta 40° - 30.5W 3388lm - 3000K - Grey
E43J - Lamp LED 3000K CRI80

Luminaire data		Equipped with	
Luminaire efficiency	: 77%	Quantity	: 1
Luminaire efficacy	: 111.08 lm/W	Designation	: LED 3000K CRI80
Classification	: A80 ↓100.0% ↑0.0%	Power	: 27 W
CIE Flux Codes	: 97 100 100 100 77	Colour	: 3000
UGR 4H 8H	: 11.6 / 11.6	Luminous flux	: 4400 lm
Power	: 30.5 W	Colour reproduction	: 80
Luminous flux	: 3388 lm		

Dimensions : Ø254 mm x 0.0 mm



Object : Lander / Agora / Palco In Out.
Installation : Open Areas
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1 Luminaire data

1.2 iGuzzini, Lander - Bollard (ALS5)

1.2.1 Data sheet

Manufacturer: iGuzzini

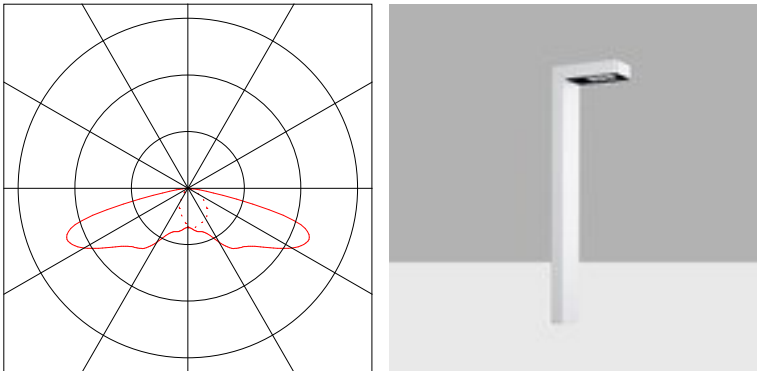
ALS5 Exteriors - Bollards and Systems for residential areas Lander - Bollard

ALS5 :
Direct light luminaire, designed to use monochrome LED lamps. It consists of a body, an optical assembly and a fixing base. Optical assembly and die-cast aluminium glass-holder frame. 5mm thick tempered sodium-calcium closing glass with black serigraphy. Body and optical assembly subjected to a multi-step, pre-treatment process, in which the main phases are degreasing, fluorozirconation (a protective surface film) and sealing (with a nano-structured silane layer). The following painting stage consists of a primer and a liquid acrylic paint, cured at 150°C, with a high level of weather and UV ray resistance. The body encapsulates two stainless steel rods fixed to the base that make the device highly knock and vandal-resistant. Longitudinal Asymmetric Optic (AL) with high performance Opti-smart reflectors in superpure aluminium coated with silver deposits offering uniform light distribution. Both the LED unit and the ballast may be substituted. Optical assembly complete with electronic control gear and output power cable. Includes a gel-based IP68 connection box for pass-through wiring. High level visual comfort for pavements and walkways. All the screws used are made of A2 stainless steel.

ALS5.15 - Bollard H=950 mm, HU Longitudinal Asymmetric Optic, Warm LED, DALI 220-240V ac - 8.7W
787.5lm - 3000K - Grey
C51E - Lamp LED Warm White

Luminaire data		Equipped with	
Luminaire efficiency	: 75%	Quantity	: 1
Luminaire efficacy	: 90.52 lm/W	Designation	: LED Warm
Classification	: A20 ↓100.0% ↑0.0%		: White
CIE Flux Codes	: 31 68 98 100 75	Power	: 6.5 W
UGR 4H 8H	: 35.9 / 12.5	Colour	: 3000
Power	: 8.7 W	Luminous flux	: 1050 lm
Luminous flux	: 787.5 lm	Colour reproduction	: 80

Dimensions : 126 mm x 271 mm x 0.0 mm



Object : Lander / Agora / Palco In Out.
Installation : Open Areas
Project number : Old Quadrangle Manchester University
Date : 05.02.2024



1 Luminaire data

1.7 iGuzzini, Palco iNOut - ø153mm (EF55)

1.7.1 Data sheet

Manufacturer: iGuzzini

EF55 Exteriors - Floodlights Palco iNOut - ø153mm

EF55 :
Spotlight designed to use LED lamps and a Very Wide Flood optic. The optical assembly and base is made of EN1706AC 46100LF aluminium alloy and subjected to a multi-step, pre-treatment process, in which the main phases are degreasing, fluorozirconation (a protective surface film) and sealing (with a nano-structured silane layer). The following painting stage consists of a primer and a liquid acrylic paint, cured at 150°C, with a high level of weather and UV ray resistance. 5 mm thick tempered sodium-calcium closing glass. Double adjustability allows a 360° rotation about the vertical axis and 90° tilting relative to the horizontal plane. Mechanical aiming locks for rotation on both the vertical axis and horizontal plane. Complete with a monochrome LED circuit and an Opti Beam Reflector optic system. The product includes a PG13.5 cable gland. Electronic DALI ballast integrated in product. Option of using optic accessories assembled via an accessory holder frame. All external screws used are made of A2 stainless steel.

EF55.01 - Spotlight with base - Warm White Led - integrated electronic control gear - Very Wide Flood optic - 48.5W 5601.5lm - 3000K - White
B15U - Lamp LED Warm White CRI>80

Luminaire data		Equipped with	
Luminaire efficiency	: 85%	Quantity	: 1
Luminaire efficacy	: 115.49 lm/W	Designation	: LED Warm
Classification	: A60 ↓100.0% ↑0.0%		: White CRI>80
CIE Flux Codes	: 90 100 100 100 85	Power	: 43 W
UGR 4H 8H	: 23.9 / 23.9	Colour	: 3000
Power	: 48.5 W	Luminous flux	: 6590 lm
Luminous flux	: 5601.5 lm	Colour reproduction	: 80

Dimensions : Ø153 mm x 276 mm



