

Consultant's Advice Notice 01

Report Name	Premium Car Park Lighting Design Intent Statement
Project	Newcastle Airport Capacity Expansion
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1 Lighting Design

1.1 Lighting Design Principles

The external lighting for the Airport Capacity Expansion (Premium Car Park area) will be designed based on the following:

- a solution that contributes to the identity of the ACE precinct providing a memorable night-time setting;
- incorporate best practice design principles;
- design in accordance with CASA Guidelines for lighting within Aerodromes; Australian Standards (AS/NZS 1158 & AS/NZS4282) and Council requirements;
- creating a safe and welcoming environment, incorporating CPTED principles;
- lighting levels to be coordinated with the CCTV camera performance parameters;
- obtrusive lighting that will be mitigated and designed according to AS/NZS4282 and CASA MOS 139 requirements;
- consideration of building usage and appropriate lighting control;
- accentuation of architectural features and elements of interest appropriately;
- solutions conducive to creating a visibly legible link between key areas and pathways.

1.2 Design Considerations

The lighting design response is driven by the overarching project vision, applied to the specific context and requirements of the Premium Car Park area and associated transition paths. We envisage the lighting design to consider the following solutions.

The pathway and street lighting will be supplied with multifunctional poles (~8m) that provide the ability to incorporate lighting, WLAN, security solutions, electricity, signage, etc.

Lighting to be incorporated into carpark awnings to provide compliant carpark lighting.

Ramps and stairs to incorporate integrated lighting within handrail / balustrade to provide compliant pathway/security lighting.

Architectural and feature lighting is to be confirmed.

1.3 Technical Design Parameters

The following categories will be applied for external areas across the site:

- Forecourt: Lighting Subcategory PA1
- Pedestrian Footpaths: Lighting Subcategory PA3
- Steps and Stairways, Ramps, Footbridges Stairs and Pathway Connecting Elements: Lighting Subcategory PE2
- Carpark General: Lighting Subcategory PC2
- Designated Parking Spaces: Lighting Subcategory PCD
- Pedestrian Crossings: Lighting Subcategory PCX

Table 3.5 from AS/NZS 1158.3.1:2020

**VALUES OF LIGHT TECHNICAL PARAMETERS
FOR PUBLIC ACTIVITY AREAS (EXCLUDING CAR PARKS)**

1	2	3	4	5
Lighting subcategory	Light technical parameters (LTP)			
	Average horizontal illuminance ^{a,b} (\bar{E}_h) lx	Point horizontal illuminance ^{a,b} (E_{ph}) lx	Illuminance (horizontal) uniformity ^c Cat. P (U_{E2})	Point vertical illuminance ^{a,b,d} (E_{pv}) lx
PA1	21	7	8	7
PA2	14	4	8	4
PA3	7	2	8	2

Table 3.6 from AS/NZS 1158.3.1:2020

**VALUES OF LIGHT TECHNICAL PARAMETERS
FOR CONNECTING ELEMENTS**

1	2	3	4	5
Lighting subcategory	Light technical parameters (LTP)			
	Average horizontal illuminance ^{a,b,d} (\bar{E}_h) lx	Point horizontal illuminance ^{a,b} (E_{ph}) lx	Illuminance (horizontal) uniformity ^c Cat. P (U_{E2})	Point vertical illuminance ^{a,b} (E_{pv}) lx
PE1	35	17.5	8	17.5
PE2	Same as for highest lighting subcategory applying to areas that abut the connecting element but, where forming part of a road or pathway, to be not less than subcategory PA3 in Table 3.5.			
PE3	Same as for highest lighting subcategory applying to areas that abut the connecting element but, where forming part of a road or pathway, to be not less than subcategory PP3 in Table 3.4.			

Table 3.7 from AS/NZS 1158.3.1:2020

**VALUES OF LIGHT TECHNICAL PARAMETERS FOR OUTDOOR
 CAR PARKS (INCLUDING ROOF-TOP CAR PARKS)**

1	2	3	4	5
Lighting subcategory	Light technical parameters (LTP)			
	Average horizontal illuminance ^{a,b} (\bar{E}_h)	Point horizontal illuminance ^{a,b} (E_{ph})	Illuminance (horizontal) uniformity ^c Cat. P (U_{E2})	Point vertical illuminance ^{a,b} (E_{pv})
	lx	lx		lx
PC1	14	3	8	3
PC2	7	1.5	8	1
PC3	3.5	0.7	8	—
PCD ^d	—	≥ 14 and $\geq (\bar{E}_h)^d$	—	—
PCX ^e	21	5	8	—