

## Engineer's Advice

<b>Job No:</b> NL213640	<b>Job Name:</b> Astra Aerolab Commercial Building One	<b>Date:</b> 13/01/2023
----------------------------	---	----------------------------

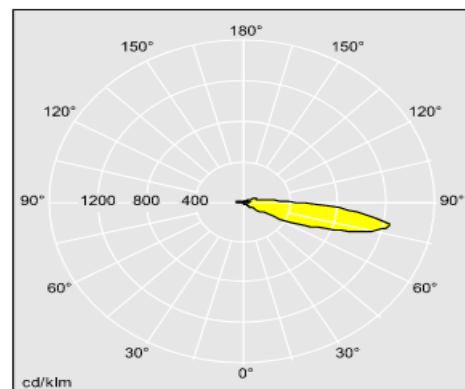
To	Copy	Company	Attention	Email
Zamzam Sammir		Cox Architecture		Zamzam.sammir@cox.com.au

### External Lighting Compliance

The external lighting for Commercial Building One has been reviewed for compliance with the Civil Aviation Safety Authority Manual of Standards Part 139. At this point in time due to the low output nature of the selected luminaires we believe that they meet the requirements of Clause 9.143 *Other lighting on the aerodrome*.

#### Thorn Raze Architectural Wall Light

These wall mounted luminaires are used to light a limited external area for safe movement of Commercial Building One. The polar plot obtained from Thornlighting below shows that the Thorn Raze projects 95% of the light distribution as downward light. The diffuser as pictured below sit recessed under the luminaire restricting any upward light and glare to approaching aircraft. The luminaire has a 6W light source with an output of 350lm produces 3.4 lux at a distance of 5m from the luminaire.



#### Bega System Bollard Head

Bollard lighting is to be used light the footpaths on the western side of the building from Stair 01. The bollard light is to be mounted at a height of 65cm. The polar plot obtained from BEGA below shows that the Bollard luminaire projects 90% of the light distribution as downward light. The diffuser as pictured below sit recessed behind the housing of the luminaire restricting any upward light and glare to approaching aircraft. The luminaire has a 7W light source with an output of 1080lm produces 0.2lux at a distance of 4m from the luminaire.



CIVIL



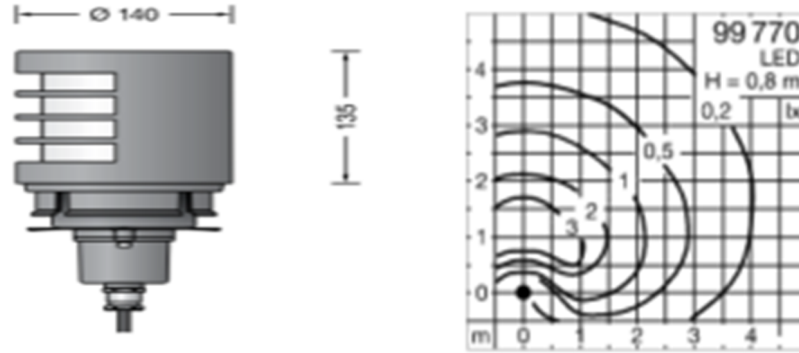
STRUCTURAL



BUILDING  
SERVICES

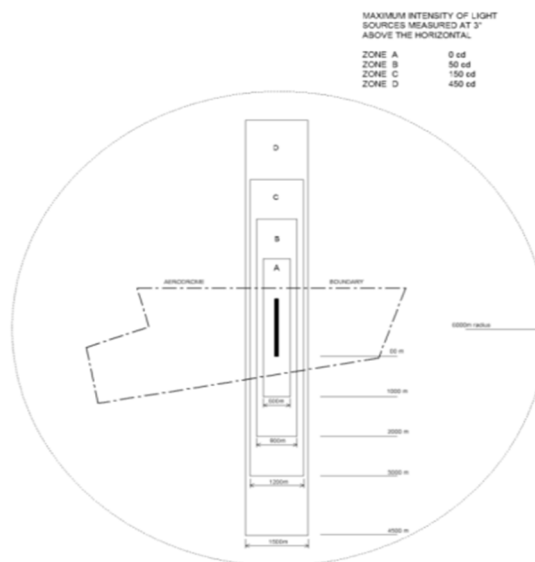


SUSTAINABILITY



## Conclusion

Both luminaires are within the permissible limits of CASA Part 139 (aerodromes) Manual of Standards 2019 for horizontal light distribution. The building is approx. 1,200metres west of the airport runway, so we assume that the building falls into zone C (refer to diagram below) the allowable lighting at 3° above the horizontal is 150 candela or 10lx. Both specified luminaires have a light output of less than 10lx at 3° above the horizontal.



From: Cam Fields

Signature: *C. Fields*

Received: 13/01/2023



CIVIL



STRUCTURAL



BUILDING  
SERVICES



SUSTAINABILITY