If a building becomes architecture, then it is art. Clearly, if a building is not functionally and technically in order, then it isn't architecture either – it's just a building.
Arne Jacobsen

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LIGHTING DESIGN

STEENSEN VARMING

WSU Façade Projection Development Application AS/NZS 4282 Compliance

Project No: 237139

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1.0 Introduction

This Consultancy Advice Note has been produced to support the State Significant Development Application (SSDA) SSD-64916225 with particular reference to the proposed signage zone which will facilitate a future projecting sign type at Western Sydney University, Indigenous Centre of Excellence on the buildings east and north elevations on the corner of Railway Street and Victoria Road, Parramatta.

The SSDA does not seek approval for the detailed installation or content of the projecting signage type and therefore seeks consent for its nominated zone only. It will be subject to a future separate approval process likely to take place from 2025 onwards. The content of the projection has not been confirmed.

2.0 Projection Objectives

2.1 Introduction

It is understood the ICoE projection signage zone is based on the following objectives

- Enhance the nighttime presence of the ICoE and be a visual draw to the building and act as a visual gateway to the university,
- Provide a display location for indigenous art and intermittent advertising for the university.
- Control glare, discomfort, obtrusive light spill
- Consider the safety requirements for safe vehicular passage.
- Minimise impact upon the local environment
- Be operated on a curfew period basis with the projection non-operational after 10pm.

The future projection will play a vital role in the communication of the Indigenous Centre of Excellence identity and intent relating to the cultural significance and cultural events, material nature of the building, and enhancement of the City of Parramatta experience as a liveable safe and attractive city.

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3.0 Compliance Requirements

3.1 General

The lighting design is a work in progress. This report is based on the known design intent and outlines the parameters within which the design and operations of the projection will adhere and address:

- Control of luminance (emitted) light levels of a generally static projection of limited animation for the purposes of the display of indigenous artworks and limited university advertising to minimise intrusion on surrounding amenity.
- Guidelines relating to environmental impact on flora and fauna and minimisation of obtrusive light to neighbouring residences.
- Impact on the safe conditions for vehicular traffic

3.2 Compliance Requirements

As this SSDA seeks content for a signage zone only, and the projected signage content has not been confirmed, however the projection illumination will comply with State Environment Planning Policy (Industry and Employment) 2021, Schedule 5, Section 7 Illumination by complying with the requirements to

- control unacceptable glare
- not impact on the safety of pedestrians, vehicles or aircraft
- not detract from the amenity of any residents or other form of accommodation
- will be subject to a curfew.

In addition to compliance with Schedule 5 of the SEPP 2021 the projected signage will also comply with AS/NZS 4282 Control of the obtrusive effects of outdoor lighting. To comply with AS/NZS 4282 the projection signage will minimise

- impact upon surrounding residents
- transport users
- transport signalling systems
- sky glow
- impact on flora and fauna,
- Nor impact on First Nations traditions regarding the observation of celestial objects in the night sky.

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3.3 Design Approach

The fixed building signage zone pertaining to the building identification signage is not proposed to be lit.

The projected signage for the ICoE will comply with the SEPP and AS/NZS4282 requirements.

It will minimise upward light spill, impact on vehicles, signalling systems, aircraft, pedestrians, or amenity of residence or other forms of accommodation, by limiting projection to the designated projection surface area of the building. It is understood that there is little to no

As part of the ICoE intent to provide an Astronomy Garden the projection will be controlled to not significantly add to the existing sky glow or impact on the ability to observe the night sky.

The projected signage design and operation will consider the surrounding context the ICoE and not exceed the maximum luminance applicable to the designated environment zoning which is assumed to be *Environmental Zone A3 Medium District Brightness* as outlined in the below table 3.1 of AS/NZS4282:2023

Table 3.1 — Environmental zones

Environmental zones	Ambient light conditions	Descriptions/ Examples
A0	Intrinsically dark	UNESCO Starlight Reserve. IDA: Dark Sky Parks, Reserves or Sanctuaries Major optical observatories Other accreditations for dark sky places for example astrotourism, heritage value, astronomical importance, wildlife/ecosystem protection Lighting for safe access may be required
A1	Dark	Relatively uninhabited rural areas (including terrestrial, marine, aquatic and coastal areas) Generally roadways without streetlighting through rural areas
A2	Low district brightness	Sparsely inhabited rural and semi-rural areas Generally roadways without streetlighting through suburban, rural or semi-rural areas other than intersections
A3	Medium district brightness	Suburban areas in towns and cities Generally roadways with streetlighting through suburban, rural or semi-rural areas
A4	High district brightness	Town and city centres and other commercial areas Residential areas abutting commercial areas Industrial and Port areas Transport Interchanges
TV	High district brightness	Vicinity of major sport and event stadiums during TV broadcasts
NOTE Zones A0 and A1 would normally have a minimum area of 50 ha.(0.5 km^2). There may be smaller environmentally sensitive areas.		

The projection will be programmed to a curfew to minimise impact on local flora and fauna, and further minimise impacts on the above mentioned design compliance requirements

3.4 Lighting Control

To comply with the requirements of AS/NZS 4282 the projected signage will be dimmed to meet the requirements of an A3 environmental zone. The illuminance of the projected display surface will be limited to 250cd/m2 to deliver appropriate levels of luminous impact on the surrounding environment and any surrounding sensitive properties, vehicular traffic, and reduce energy consumption as outlined in Table 3.4 of AS/NZS 4282 below.

Table 3.4 — Maximum average luminance of surfaces (cd/m²)

Application conditions	Environmental zones				
	A0	A1	A2	A3	A4
See Clause 3.3.3	0.1	50	150	250	350

The projected signage operational hours will be limited to the curfew hours of no later than 10pm at which time the projection switched off.

The projection will be controlled by an intelligent control system to ensure the luminance levels are achieved and strict curfew hours of operation are ensured.

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4.0 Reference Documents and Guidelines

The lighting approach for this project is dedicated to enhancing the architecture and indigenous culture and education, while considering the environment and recognising the need for specific guidelines, environmental considerations, and visual comfort:

Lighting codes, regulations, standards, and guidelines are to be considered as part of the projection and operation; they are carefully utilised in informing and guiding the design processes, and in setting parameters for the design intent as documents to build on and to improve project outcomes, rather than directly being applied as absolute design procedures. Quantitative lighting aspects, which form the basis of the majority of lighting standards, provide guidance in some aspects of the design. A comprehensive lighting design, however, requires a qualitative approach where a wide range of interdependent factors that affect the perceptual experience are taken into account and may require standards to not only be met but be exceeded to benefit the final design outcome and further minimise the impact of the obtrusive effects of outdoor lighting. The following specifications and guidelines have been referred to as part of the criteria and parameters outlined in this report:

Standards and Guidelines:

- Sydney Lights - City of Sydney Public Domain Design Codes, 2015 -Steensen Varming
- AS/ NZS 4282:2019 Control of the obtrusive effects of outdoor lighting
- Sydney Development Control Plan 2012
- State Environment Planning Policy (Industry and Employment) 2021, Schedule 5