

## **Stadium Australia Redevelopment, Sydney Olympic Park (ANZ Stadium)**

### **Best practices for the mitigation of environmental and obtrusive light pollution**

This statement has been prepared in response to the Secretary Environmental Assessments Requirements (SEAR) Item 6 – Environmental Amenity

The redevelopment of the Stadium Australia facility at Sydney Olympic Park will involve the replacement of existing lighting systems including Sports lighting, façade lighting, external lighting at new entrance thresholds and functional lighting throughout the interior spaces. There will also be commercial display screens situated around the exterior of the stadium shell.

The two primary environmental considerations in the execution of the lighting design are to minimise atmospheric light pollution causing sky-glow, and to limit unwanted spill lighting and glare to neighbouring residential and commercial properties as well as surrounding habitats.

To satisfy these considerations in accordance with best practice guidelines, all of the external lighting systems will be designed and installed in accordance with *AS4282: 2019 - Control of the obtrusive effects of outdoor lighting*.

#### **Site Context**

The Stadium Australia facility, situated on the Western side of Olympic Park, is immediately surrounded by other sporting facilities and venues as well as industrial zoning to the West, which is in the process of being redeveloped for mixed uses, and low-rise commercial zoning to the East

There are a some residential, tourist and visitor accommodation areas in the vicinity of the stadium. This includes the nearby Novotel and Pullman, the residential apartment buildings along Bennelong Parkway in the East, and the future Cater Street precinct to the West as well as the residential housing in the surrounding suburbs.

Additionally, there are a number of habitats for local flora and fauna in the surrounding wetlands which will be taken into consideration with the design of external lighting systems and their functionality.

Light spill and the impacts of glare caused by lighting systems from the operation of the stadium will be managed in accordance with AS4282 guidelines and limitations to ensure minimal impact to the amenity of these areas caused by new lighting systems.

#### **Sports Lighting**

The lighting conditions for broadcasting HD televised sporting events are very stringent and require an array of very high intensity luminaires to reproduce the best results. Using contemporary LED luminaires allows for a high degree of optic control limiting the upward light pollution. Sports lighting systems will be aimed directly toward the pitch and located underneath the retractable roof structure limiting direct upward waste light. The design shall incorporate an Intelligent Lighting Control System to ensure that the lighting satisfies multiple tiers of play levels, or a variety of performances and events scenarios, without over-illuminating.

#### **Façade Lighting**

Feature lighting to the external shell and roof structure of the stadium enhances the unique character and provides an energetic atmosphere supporting the nature of the facility. The lighting for the stadium façade will showcase the best attributes of the architecture to create an attractive, landmark icon. The

design shall include multiple display scenes of the façade which allows for a more energetic and striking scenario during game events (such as blue for State of Origin), and a softer outcome with natural lighting tones on non-game evenings. The design will also allow for reductions in intensity of the lighting over the course of the evening, with a switch-off at curfew time slots.

### **External Lighting**

Lighting elements introduced to the external entry zones for safe movement and security operations will use luminaires with full cut-off optic control and be capable of varying light intensity to satisfy a variety of different events and spectator numbers, as well as pre and post-curfew lighting levels.

Through considered design and lighting programming, the stadium will accommodate the expectations for a modern world-class stadium as well as maintain the amenity of the surrounding residents and minimise light pollution to nearby habitats.