3. Urban design vision, objectives and principles

3.1 Vision

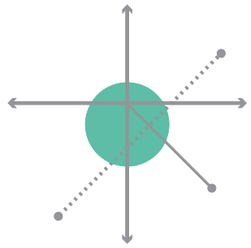
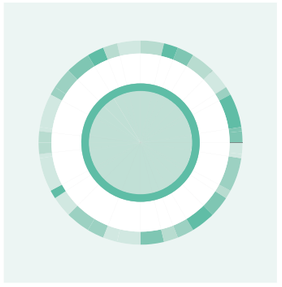
Sydney Gateway will be a memorable arrival and departure point that befits Sydney's stature as a vibrant global city and major entry point to Australia. It will be an exciting threshold experience that combines the highest quality engineering, landscape, architecture and art. It will celebrate the unique qualities of the place and contribute positively to the local community and environment.

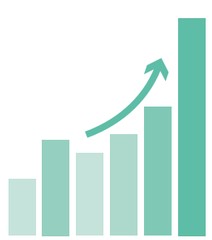
Figure 3-1. Aerial view of La Perouse, Sydney Airport and Botany Bay

3.2 Project urban design objectives and principles

The primary urban design objectives and principles for the Project are aligned with those identified in the EIS / MDP, these objectives and principles are implemented throughout the detailed design process of the various Project elements to, in turn:

- Improve connectivity to Sydney Airport terminals by providing road connections that will cater for forecast growth in passenger and air freight volumes
- Support the efficient distribution of freight to and from Port Botany and Sydney Airport to logistic centres in Western Sydney
- Improve the liveability of Mascot town centre by reducing congestion and traffic movements through the local road network.

	Objectives	Principles
1 	**Leading edge environmental responsiveness** Ensure environmental practices respond to the natural systems of the area and promotes sustainability.	**Existing vegetation** – Provide a robust revegetation strategy that features indigenous plant species that are suitable for the Australian climate and reference this coastal location. **Protect and enhance waterways** – Capitalise on the opportunity to re-imagine the Alexandra Canal and make it a more visible part of life in this area. **Landscape restoration** – Provide a landscape restoration strategy that allows for landscape to be restored in disturbed areas, either as replacement landscape or as residual landscape. **Green infrastructure** – Integrate natural patterns and ecology into the design, protect watercourses and manage drainage to support the greening of the Project lands – Incorporate leading edge WSUD strategies into the design – Provide measures to reduce the urban heat island effect.
2 	**Connectivity and legibility** The Project will improve multi-modal connectivity and legibility between the Project site and surrounds.	**Connectivity** – Improve access to Sydney Airport – Improve active transport links across the precinct as a part of an overall strategy – Ensure that pedestrian and cycle facilities are safe and fully integrated into the design of the Project. **Amenity** – Provide opportunities along the ATL to improve amenity that would help enhance the user experience. **Accessibility** – Integrate the Project with local streets and open spaces such as the Tempe Recreation Reserve, the Alexandra Canal and Mascot active transport routes. **Wayfinding** – Leverage significant Project elements to provide intuitive wayfinding across this complex infrastructure.
3 	**Placemaking** To create and support a sense of place drawing on the character of the local area.	**Placemaking** – Create a strong sense of place that derives its narrative from a ‘Connection to Country, and an understanding that the landscape and the infrastructure itself can be a work of art. **Views** – Understand that the experience of this place will have a temporal nature and be formed through movement, understand how wayfinding points relate through motion and shifting visual fields of drivers, cyclists and pedestrians. **Existing natural context** – Rediscover the natural context of the site that has been lost over time to provide a strong set of visual markers through feature planting and sculpted landforms that reference the site’s natural identity.

		Objectives	Principles
4		**Urban renewal and livability** Fit the Project sensitively into the unique natural, built and cultural environment of the airport landscape and its urban surrounds in a way that promotes improved urban amenity.	**Improved streetscapes** – Develop a unified landscape strategy that helps to tie in with the existing communities, whilst allowing for enhance landscape areas which could be used as visual features, to improve the streetscape environment **Improved connectivity** – Provide improved public access to recreation assets such as the Alexandra Canal and Tempe Reserve. **Safety and security** – Integrate CPTED strategies into all aspects of the design to ensure that they are safe and comfortable to use at all times – Provide efficient and conflict free travel routes that are easy to understand and navigate.
5		**Memorable identity and safe, enjoyable experience** Create a memorable sense of arrival and departure that enhances the image of global Sydney.	**Motorway experience** – Provide a memorable driver experience that marks the sense of arrival and departure to the airport and creates a ‘gateway’ experience. **Equitable experience** – Provide a design that can be experience by all users from the air, or the ground during the day and night. **Progression** – Create a memorable experience that capitalises on the potential of the infrastructure itself to become a work of art and aid in wayfinding and placemaking – Develop a place specific identity that is derived from the story of this place, its geography, landscape, a sense of progress in the journey – Ensure that the ‘gateway’ experience is seamless with WestConnex and can be enjoyed by all – each individual journey is valued and equal. **Views** – Enhance opportunities for creating visual landmarks which would create a unique identity for the motorway and serve as wayfinding points and provide a sense of orientation for the journeys traversed.
6		**A new quality benchmark** Achieve a well designed, durable and sustainable environment.	**High quality integrated design** – Ensure that a modular approach is taken to Project elements that feature a family of forms strategy to simplify implementation and maintenance – Provide a fully integrated outcome that balances urban design, engineering and experience to deliver enduring value. **Durability** – Use materials that are suitable in this marine environment – Use materials that are robust and will resist vandalism.

The urban design also aligns with the principles of the Australian Urban Design Protocol (AUDP) as outlined in the document Creating Places for People, an Urban Design Protocol for Australian Cities.

The objectives of the AUDP is founded on the integration of five pillars being productivity, sustainability, liveability, leadership and design excellence. Twelve principles underpin the Protocol based on design, leadership and governance. The below table demonstrates the application of the key principles on the Project.

Principle	Expected outcome	Application on the Project
Design principles about place: productivity and sustainability		
Enhancing	Enhances local economy, environment and community	The Project's urban design has been developed as part of an integrated, collaborative and co-design process, which includes contractors, engineers, artists and other consultants to achieve excellence in design. The design respects the community and stakeholder needs, creates opportunities for businesses to prosper, provides for safety opportunities to sustain and enhance the built and natural environment, enhances connectivity and celebrates heritage, environmental and social values that provide a sense of place and identity.
Connected	Connects physically and socially	
Diverse	Diversity of options and experience	
Enduring	Sustainable, enduring and resilient	
Design principles about people: liveability		Key initiatives include: – Providing an Aboriginal voice to the Project, which will provide 'Connection to Country' – Developing a robust consultation strategy that allows all stakeholders and the community to participate in the development of the design, including Councils (Inner West, City of Sydney and Bayside), EESG, Heritage Council of NSW, MLAHC and LaPACA – Developing a project narrative that uses the existing and proposed to integrate all project elements to create a piece of environmental art – Creating a 'gateway' experience at various scales using the vertical visual elements such as the mounds and arches as navigation points and the linear elements such as the walls and screens to provide linear continuity, together provided to enhance the user experience – Providing opportunities for heritage interpretation, particularly along the ATL and on project elements that are highly visible, such as walls and screens – Incorporating crime prevention through environmental design (CPTED) principles to reduce the occurrence of crime – Providing opportunities to reduce the heat island effect by minimising the use of concrete along the ATL and introducing special pavement materials which cause lesser carbon emissions than concrete, whilst increasing opportunities to provide shade at rest areas – Providing opportunities to include recycled materials in the Project design elements.
Comfortable	Comfortable and welcoming	
Vibrant	Vibrant, with people around	
Safe	Feels safe	
Walkable	Enjoyable, easy to walk and bicycle around	
Principles about leadership and governance		
Context	Works within the planning, physical and social context	
Engagement	Engages with relevant stakeholders	
Excellence	Excellence, innovation and leadership	
Custodianship	Considers custodianship and maintenance over time	

Figure 3-2. Craigieburn Bypass ©Peter Hyatt

Figure 3-3. Westlink M7 ©Brett Boardman

Figure 3-4. Glenelg Tram Overpass ©David Russell

Figure 3-5. Hastings Bridge ©Illumination Arts

3.3 Environmental values

The design is developed within approved site boundaries. The sites for permanent infrastructure minimise the disruption of existing green spaces. As part of the landscaping, greenery is provided in the visual catchment of the project, where possible.

Specific initiatives include:

- Seamlessly tying in with the public domain improvements currently underway by Inner West Council for the Tempe Recreation Reserve
- Maintaining landscape continuity, where practical and permissible, whilst working with the limitations of National Airport Safeguarding Framework (NASF) guidelines
- Management of existing and newly implemented landscape to ensure high plant survival rates
- Planning for systematic site landscape management and maintenance, including measures to provide for regular watering, pruning, mowing, mulching and top dressing; replacement of dead plants; and removal of weeds.

3.4 Heritage values

Heritage values have been considered in the development of the Project's urban design.

Specific initiatives include:

- Commissioning local Aboriginal artist/s to integrate art as an expression of the urban design, providing an interpretation of Aboriginal heritage, recognising the history and enhancing the legacy of the practices of the Elders to provide Connection to Country
- Providing opportunities for the interpretation of the historical significance of Non-Aboriginal elements such as the Alexandra Canal, the Botany Rail Line and the airport.

An Aboriginal heritage interpretation strategy will be developed by the JHSWJV once the salvage excavation works have been completed. Consultation with registered Aboriginal parties and other relevant stakeholders will then be undertaken as part of the draft strategy. The strategy will have regard to Sydney Airport Master Plan 2039 and the Sydney Airport Heritage Management Plan.

Strategies for salvaging items for reuse may include:

- Identification of elements that are considered of salvage value
- Identification of opportunities for interpretive reuse
- Contacting organisations to ascertain any interest in taking the elements salvaged, should no opportunities for reuse within the project be available.

Following items are being considered for salvage value:

- Archaeological deposits along the railway corridor
- Remnants of canal walls disturbed during construction.

Feature elements such as interpretive signage plaques and pavement markers have been provided along the ATL pathways and the rest areas as part of this PDLP to incorporate the Aboriginal heritage interpretation in accordance with the interpretation strategy.

Non-Aboriginal heritage interpretation will be undertaken in accordance with the NSW Heritage Manual (NSW Heritage Office and Department of Urban Affairs and Planning, 1996), Interpreting Heritage Places and Items: Guidelines (NSW Heritage Office, 2005), and the NSW Heritage Council's Heritage Interpretation Policy.

Feature elements such as interpretive signage plaques, and pavement markers have been provided along the ATL pathways and the rest areas as part of this PDLP to incorporate the interpretation of the historical significance of the following items:

- Alexandra Canal
- Sydney (Kingsford Smith) Airport Group
- Cooks River Container Terminal
- Mascot (Shea's Creek) Underbridge
- Botany Rail Line.

The design has been developed in accordance with the Statement of Heritage Impact for the project by recognising the key items of historical significance that have been listed in the heritage registers and identifying them as opportunities to provide heritage interpretation. Consideration has been given in the design to minimise the potential for visual impacts by incorporating sympathetic fabric, colour and form in the design through a careful section of materials that are conducive to their surrounding context.

The bridges over Alexandra Canal have been designed by appropriate heritage urban design professionals to be sympathetic to the heritage sensitivity and industrial landscape of the canal. They adopt a family of forms using steel trough girders, which help to span across the canal in a single span, minimising physical impacts on the canal and retain its open character. Materials, such as weathered steel has been considered to reflect the industrial character of the area. Textures on retaining walls have been provided which represent the flow patterns of water currents. The Alexandra Canal Conservation Management Plan has been taken into consideration in the design of the bridges over the canal.

The design has been presented to Heritage Council of NSW and Sydney Water and is awaiting feedback, which will be considered and adopted in the designs where reasonable and feasible.

3.5 Community safety and security

The incorporation of CPTED principles contribute to the overall safety of the Project. An assessment of CPTED has been undertaken in accordance with the following Conditions and Approvals:

- CoA E70
- UMM (SE2)
- ISCA Credit Hea-2 Crime prevention

An independent report, prepared as part of the Project detailed design, which adopts the following risk assessment methodology to assess crime:

- Identify crime risks or statistics present in the area
- Identify likely consequences of these crimes for the community, and or individual.

The assessment has been based on the following methodology:

- Check relevant compliance documents
- Identify CPTED principles based on ISCA approved guidelines
- Determine applicable CPTED principles
- Develop a risk assessment methodology
- Conduct desktop analysis of crime statistics
- Identify risks, likely consequences and applicable CPTED principles.

Based on the desktop crime statistics and mapping information above, and Section 4.5.3 of the *EIS Technical Working Paper TWP 1 Transport, Traffic and Access*, which outlines that the average pedestrian and cyclist activity carried around Alexandra Canal is 600 cyclists and 100 pedestrians per day with about 90 cyclists and 10 pedestrians during the AM and PM peak hours, resulting in about 700 pedestrians and cyclists per day. Based on these findings, it can be assumed that areas around the Project area are of low pedestrian / cyclist activity and 'medium' fear of crime.

The following measures have been provided to mitigate the risk of crime:

- Passive surveillance measures with the provision of increased pedestrian and cyclist traffic and increased amenity such as rest areas etc, along the ATL
- Lighting at key locations along the ATL
- Optimisation of the alignment to maintain clear sightlines and avoiding blind corners or pockets
- Maximising the openings in the underpasses and on approaches
- Careful selection of patterns, textures, and colours at key locations such as underpasses, walls, and screens to help deter graffiti and vandalism
- Providing opportunities to involve the community to contribute towards the development of the Project, creating a sense of ownership.

3.6 Sustainability

Sustainability is considered in the overall design approach across the lifecycle of the infrastructure, including during construction, operation and maintenance.

Initiatives include:

- Processes in place to reduce wastage of material during construction
- Use of digital engineering and 3D modelling for construction planning to optimise sequencing and enable more efficient building works
- Commitment to achieve 'excellence' in the ISCA certification
- Use of modular, durable materials and detailing across surface works to reduce the level of maintenance, repair or replacement
- Implementation of WSUD initiatives through vegetated drainage channels utilised across the Project, to minimise the extent of hard surfaces, reduce runoff velocity and improve water quality
- Selection of appropriate plant species to withstand extreme Australian summer heat and low rainfall, with groundcovers and mulch to suppress weeds and reduce frequency of maintenance.

Infrastructure Sustainability Council of Australia

This PDLP meets the requirements of Urb 1 – Urban design criteria in the ISCA IS Version 1.2 Technical Manual with the inclusion of the following items:

- Site analysis and planning – refer to Chapter 2.0
- Vision and objectives – refer to Chapters 3.0, 5.0 and 6.0

The requirements for Urb 2 – Implementation criteria in the ISCA IS Version 1.2 Technical Manual is achieved through the delivery of detailed design and documentation of the design elements illustrated in this PDLP. The detailed design process provides documentation that will be constantly refined throughout the Project up until the point the design is 'Issued for Construction' stage. The design will then be implemented in construction.