Sustainability Framework

White Bay Power Station & Robert St. sub-precincts

February 2022– v4

Prepared for: NSW GOVERNMENT Planning & Environment

atelier ten INTEGRAL

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Document Control

Version	Date	Authors	Summary
01	16/11/2021	Mary Casey Paul Stoller	100% Draft for comment
02	01/12/2021	Mary Casey Paul Stoller	Updated to include comments from DPE and COX
03	04/02/2022	Mary Casey Paul Stoller	Updated to include addendum
04	15/02/2022	Mary Casey Paul Stoller	Updated to include comments from DPE and COX

Acknowledgement

Atelier Ten and Integral Group acknowledges local Aboriginal people have lived an abundant and sustainable lifestyle within a complex kinship system of numerous families and clans on this Country including the Wangal and Gadigal peoples, and recognise their continuing connection to land, waters, skies, and community.

We are inspired by and learn from knowledge and stories of Country.

We pay our respect to Traditional Custodians and their cultures, and to Elders past, present, and emerging.

Contents

Executive Summary

The following report summarises the sustainability ambition and metrics for the White Bay Power Station (WBPS) and Robert St. sub-precincts. The content is based on the existing strategy for the Bays West Precinct, focusing on the specific initiatives applicable to WBPS and Robert St. sub-precincts.

The sustainability concepts included in the report are related to the Environmental Sustainability of the place and have been categorised by Place-based concepts and Embedded-concepts.

This document provides support for a high level of sustainability ambition at WBPS and Robert St. sub-precincts and identifies site-specific opportunities for using sustainability to deliver a better place for NSW.

Sustainability Concepts

The sustainability concepts are framed by an overarching commitment to Connection with Country – the recognition and responsibility that this place was, is, and will continue to be a place of cultural significance for Aboriginal Peoples.

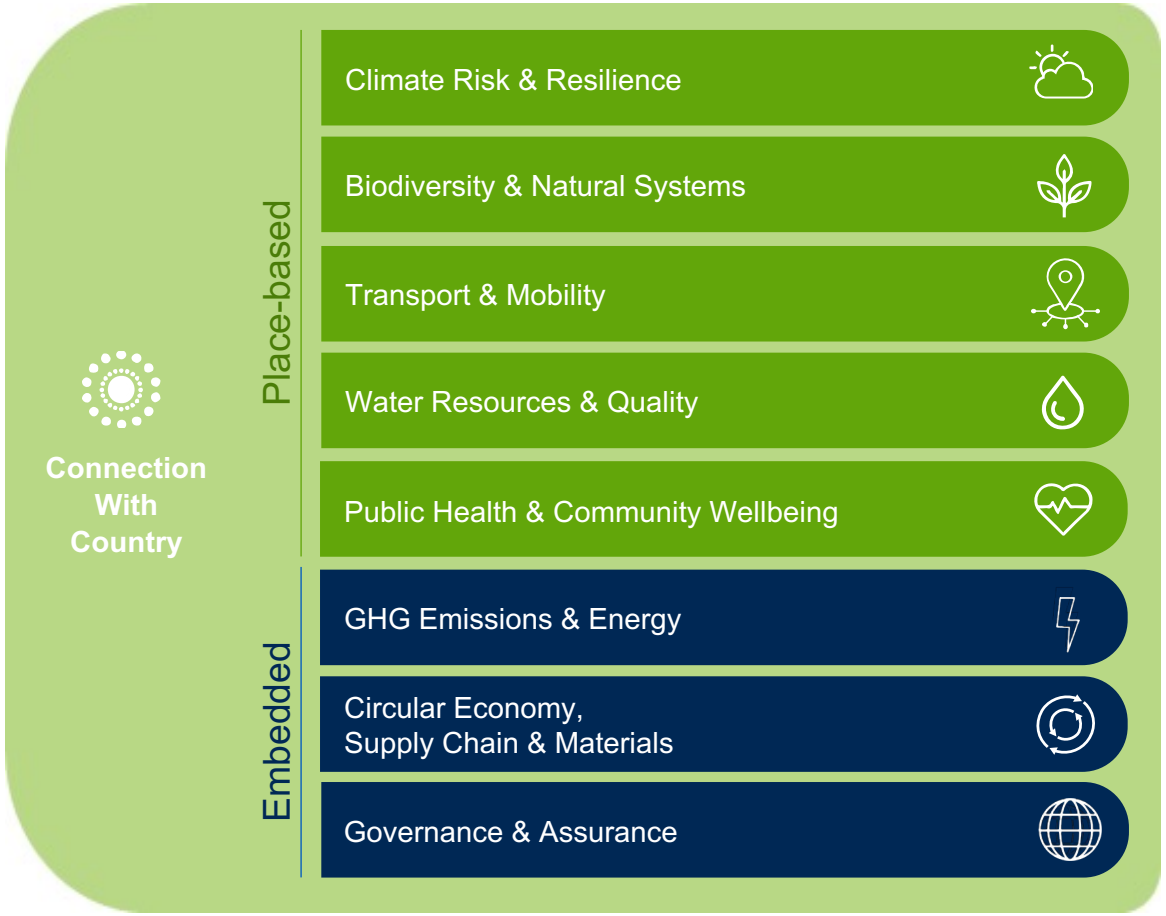
In support, eight sustainability concepts have been identified that support the goals of the UN SDGs, realise NSW and local policy ambition, and meet industry expectations for urban renewal.

The sustainability concepts have been assessed on two criteria:

- Place-based concepts that are specific to Bays West and tailored to deliver on place outcomes/ vision.
- Embedded concepts, applied across all urban renewal development precincts. These are aligned to government policy and are based on world's best practice. Further details on these are included om the Bays West Sustainability Framework.

The sustainability concepts outlined in this report will feed into future sustainability guidelines and planning controls in the next stage of the process, which will be rezoning and development controls.

The social sustainability and heritage components of the project are covered on other specific reports.



Engagement

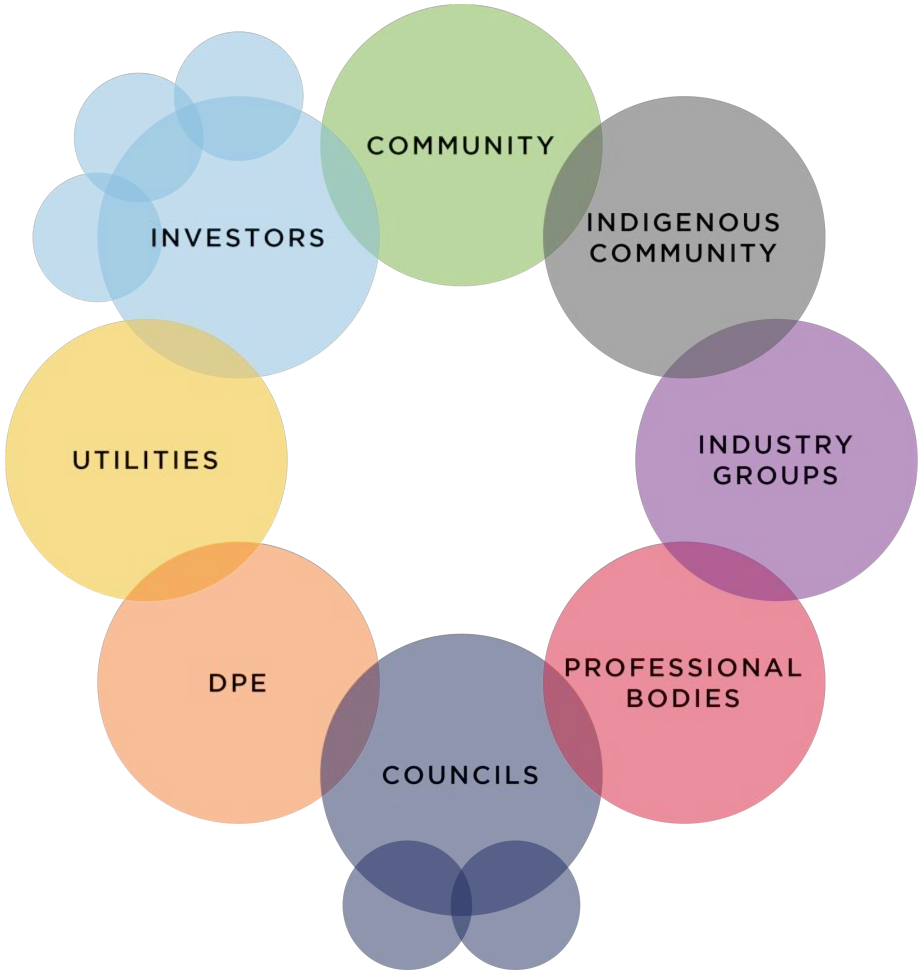
The development of this Sustainability Framework for the White Bay Power Station and Robert St. sub-precincts has been built on previous work in the Bays West Draft Sustainability Framework.

Through significant engagement with the Department, design and consultants teams, and external stakeholders the sustainability opportunities have been refined to reflect site-specific responses.

These express the individual identities of the White Bay Power Station and Robert St. sub-precincts while retaining the distinct character of the wider Bays West Precinct.

Engagement activities have included:

- holistic sustainability workshops
- focused briefings and discussions on individual sustainability concepts
- detailed consultations around defining sustainability metrics
- dedicated climate adaptation and community resilience workshops



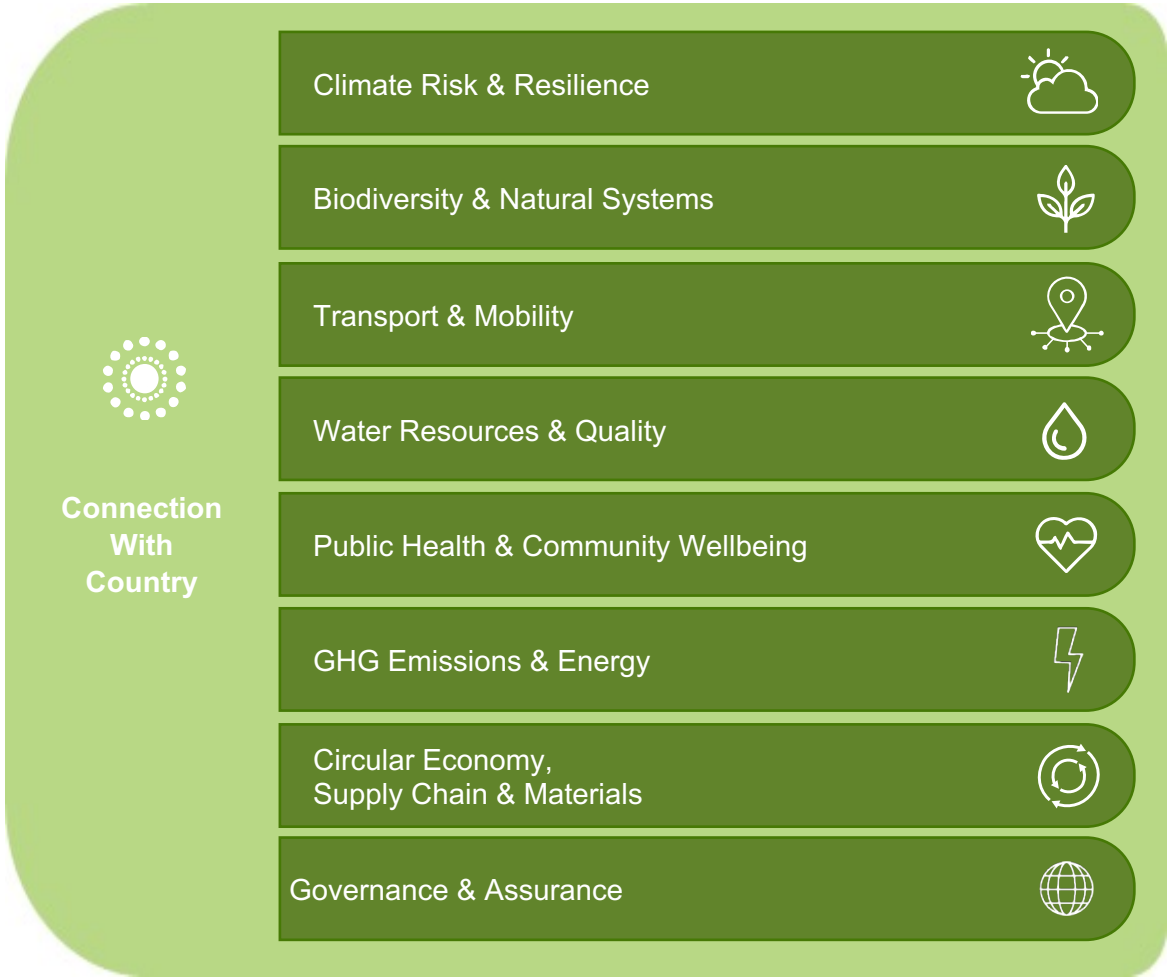
Connection with Country

Connection to Country underpins all of the sustainability concepts and ambitions at Bays West.

Local ecological and cultural histories presented in the accompanying Draft Connecting with Country Framework and the design principles embedded in: “A water songline” inform and shape all aspects of this Draft Sustainability Framework.

The sustainability-specific issues presented are inherently linked with the Draft Connecting with Country Strategies proposed. All the sustainability concepts should be read in the context of an overarching influence of Connection with Country.

The narratives around the water systems at Bays West (Nattai Gurad and Gari Gurad) play a key role. In the same way, the Sydney D’harawal stories of the Boomatjaril, Parra’dowee and Booambilye, Raiagon and the Gooraiagon, depict the richness of this immediate Country and reiterate its importance to contemporary life.



Connection with Country

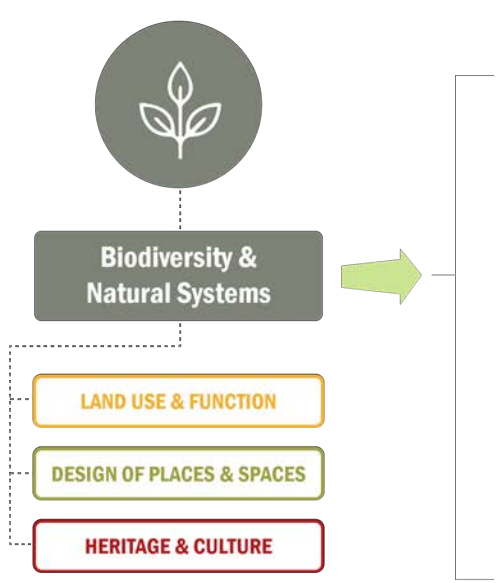
- Create public spaces that use traditional language, embody cultural stories, and create locally native ecologies and habitat for keystone species
- Reveal and celebrate natural processes, including tides, water flows, stormwater treatment, seasonal changes, and sea level rise
- Identify key aspects of Country that inform a wider Songline or journey across the site
- Avoid damaging intact or remnant Country, especially areas with complete ecologies or natural heritage
- Protect and restore local Indigenous historical and cultural sites
- Public art integrating Aboriginal and Torres Strait Islander artists
- Wayfinding and signage strategy sharing the stories of Country to connect a diverse community and local industry to deep sense of knowledge about this place
  - Multi-lingual signage incorporating local Aboriginal dialects
  - Reinstate Aboriginal names for places and streets, and help stakeholders understand, pronounce and value these names
  - Replace offensive place names with culturally inclusive and appropriate ones

Biodiversity & Natural Systems

The ambition for supporting biodiversity at Bays West is to have a net positive impact on biodiversity through project activities by 2030.

The objectives in support of increasing biodiversity are:

- To provide local biodiversity initiatives that mitigate the immediate impact of the program on-site and create new urban habitat for the city's ecosystems;
- To provide habitat connectivity for mobile species between key local and regional green and blue spaces;
- To establish a biophilic environment at Bays West that provides a material connection for tenants and visitors to natural systems;
- To achieve a Net Positive Impact on biodiversity through support for off-site land projects that generate biodiversity offset credits aligned with negative emissions instruments (afforestation, reforestation and soil carbon sequestration).
- Specific initiatives as per ecologist advice:
  - Use of native species in landscaping to reflect communities that may have existed prior to clearing
  - Provision of augmented fauna habitats such as: microbat chambers in buildings, deployment of 'seahorse hotels' in the marine environment, design marine tiles to encourage marine plants and macroalgae to colonise and grow along the edge of the sub-tidal marine environment
  - Allowing for an interpreted shoreline and using plants consistent with estuarine saltmarsh which could allow for tidal movements onto the land and considers future climate / sea level rise



Local biodiversity:
Mitigate impact of development on-site and generate new habitat

Habitat conectivity:
Consider key local and regional ecosystems

Biophilic environment:
Material connection with the built environment.
Natural blue/green infrastructure

Net positive impact:
Offset credit programs aligned with project goals

Biodiversity & Natural Systems

- Green cover and Canopy cover targets (City of Sydney, Greening Sydney Strategy, 2021).

Area\Metric	Green Cover	Canopy Cover
Streets	39%	34%
Parks	86%	46%
Property	28%	20%

There are no current specific targets for green cover applicable to the Inner West council. Recent relevant work from City of Sydney is proposed to inform the targets for the sub-precinct.

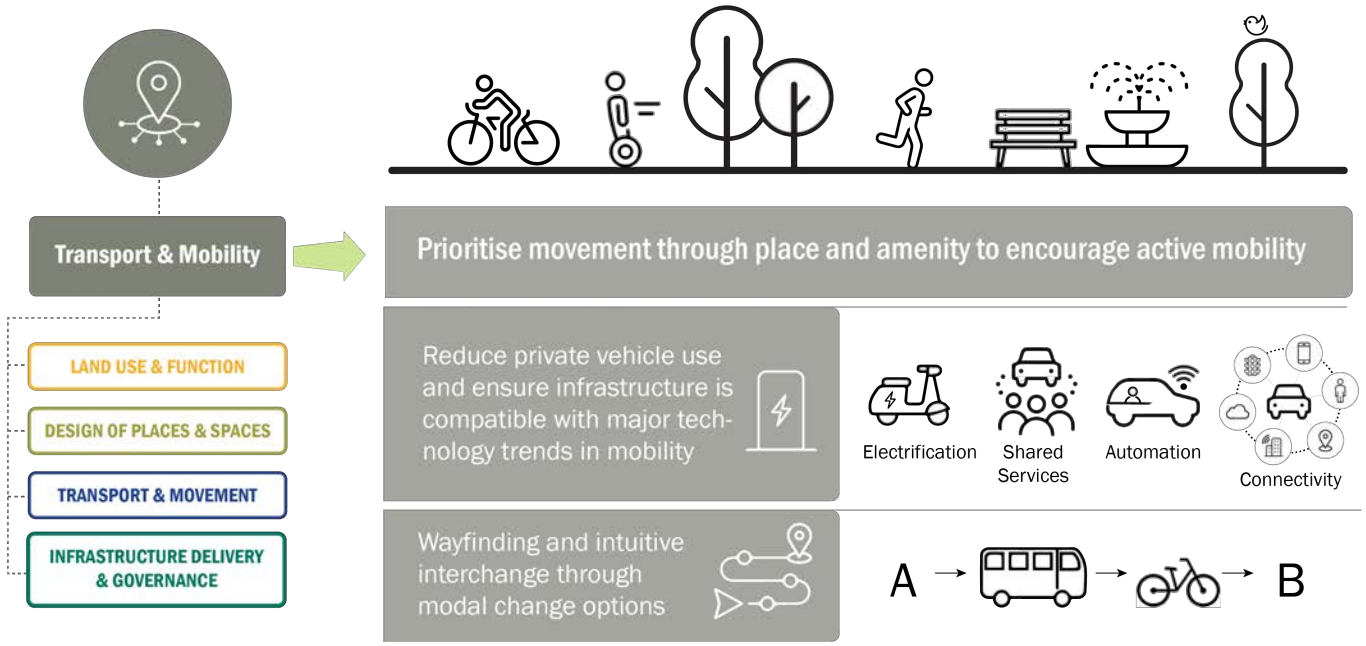
- 100% surface water runoff filtered through landscape treatment before discharging to waterways
- Balance evapo-transpirative planting for localise passive cooling and drought-tolerant plant species
- Protect existing and create new urban habitat for terrestrial and aquatic species:
  - White's seahorse
  - Microbats (Eastern Bentwing and Yellow-bellied Sheathtail)
  - Ecological pockets
- Protect solar access to habitat

Transport & Mobility

The ambition for transport and mobility is for Bays West to be a leader in sustainable transport with wider influence on the greater Sydney network.

The objectives for supporting sustainable transport options at Bays West are:

- Prioritising and enabling active mobility to the site (pedestrian and bicycle) for improved health and wellbeing;
- Providing an exemplar of movement and place mutually enhancing the quality of the respective experiences;
- Significantly reduce private vehicle use by supporting non-vehicular transport modes and multimodal passenger transport;
- Provision for the electrification of road mobility options – infrastructure to prepare for a high degree of parking to have EV charging capability;
- Improving the experience of customers traversing Bays West; amenity, comfort, ease of movement, modal change options, wayfinding and safety;
- Providing an exemplar of universal, equitable access;
- Supporting future mobility transitions, including vehicle sharing, ride-sharing and connected and autonomous vehicle interfaces;
- Supporting emerging transitions in the freight network, including the electrification of logistics systems.



Transport & Mobility

- Active transport friendly
  - All building entrances accessible by pedestrian routes and bicycle paths
  - Micromobility station areas located in close proximity to building entrances with passive surveillance and charging capacity
  - Continuous shade coverage along streets, and pedestrian and bicycle routes where possible (natural or constructed)
  - Slow streets with traffic calming
- Public transport integration
  - Integration of ride share pick-up / drop-off (PUDO) bays
  - Integration of car share parking for Mobility-as-a-Service (MaaS) operators (e.g. GoGet, Lime)
  - Provision of a centralised servicing area for last-mile connectivity/servicing/deliveries
  - Integration of digital infrastructure/ platform partnerships to enable advanced engines for multimodal trip planners
- Full electric mobility vehicle support
  - Parking to have charging capacity in line with best practice expectations (including number of spaces, charging speed, and monitoring capacity)
  - Infrastructure enabling 100% parking to have EV charging capacity in future
  - Infrastructure to facilitate future EV to grid charging
  - Other (scooters, bikes, etc.)

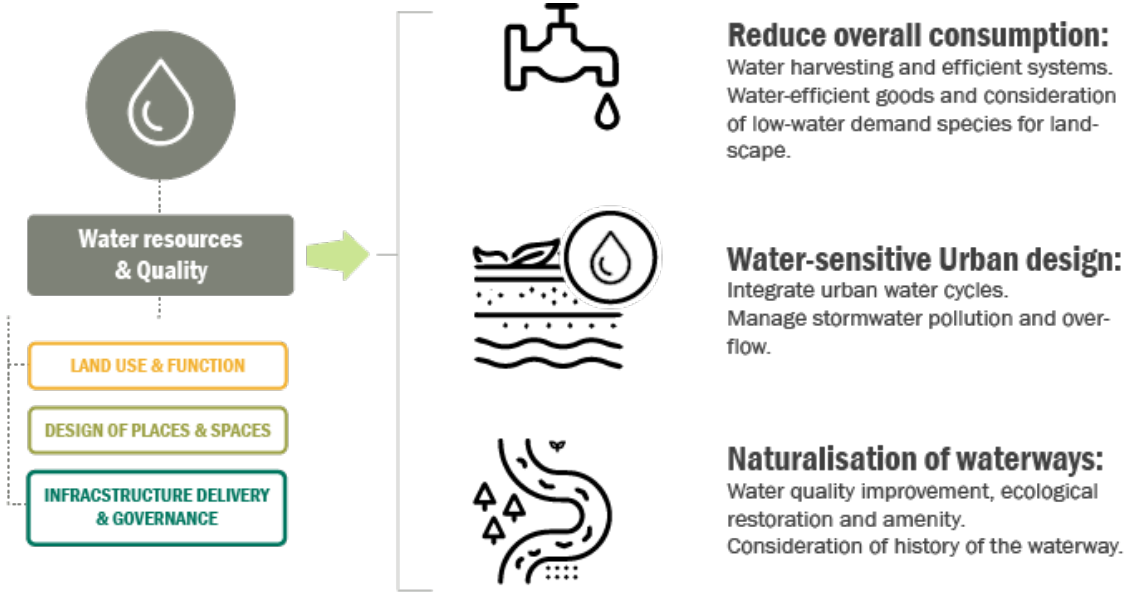
Karen Blixens Plads, Copenhagen

Water Resources & Quality

The ambition for water resource management at Bays West is to preserve non-renewable water resources and to provide a net improvement to environmental water quality as a result of development.

The objectives for responsible water management at Bays West are:

- To reduce overall consumption of water resources;
- To reduce stormwater pollution flowing to Sydney Harbour significantly beyond best practice guidelines;
- To solve current flooding issues, and reduce flood and inundation risk as a result of intersecting climate change pressures of sea-level rise and increased rainfall;
- The alignment of water quality, supply source, and treatment needs to enable effective water harvesting and re-use;
- To identify mechanisms for waste-water treatment and re-use aligned with best practice utilities and implement solutions that can be sustainably operated over the full life of the precinct.



Water Resources & Quality

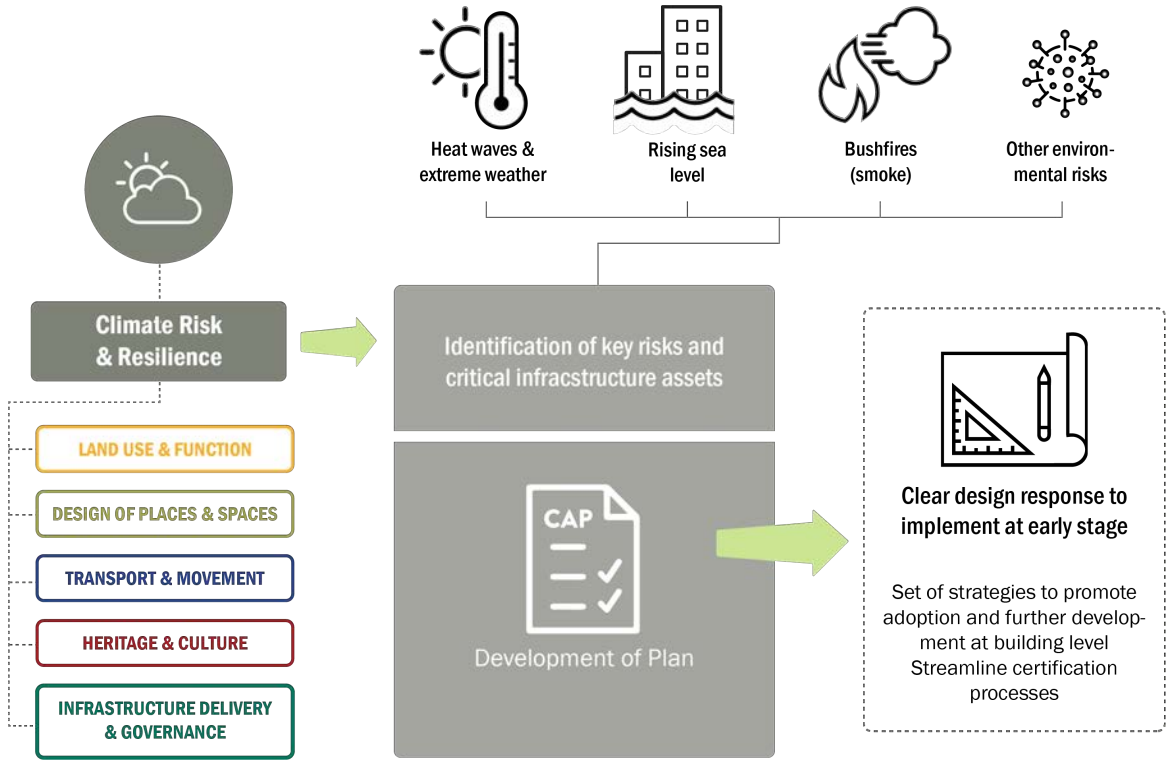
- No potable water for non-potable uses
- Capture rainwater from all non-trafficable roof surfaces
- Reuse harvested rainwater for landscape irrigation and other non-potable uses
- Separate purple pipe for future non-potable utility connection
- Water channels, swales, and other landscape features slow and retain stormwater for infiltration
- Improve water quality in and around the precinct through remediation and appropriate landscape treatment.
- Quality of runoff meets or exceeds highest standards for the harbour, quantity is not increased
- Universally accessible drinking water fountains, with water bottle filling, are available in all public spaces
- Protect space for water recycling plant sufficient to serve Bays West
- Creation of interpreted aquatic habitats to include bioretention / water quality improvements for overland flow from the land to marine environments in line with ecologist advice.

Climate Risk & Resilience

The ambition for resilience at Bays West is to effectively mitigate chronic stresses and insulate against acute climate risks through design.

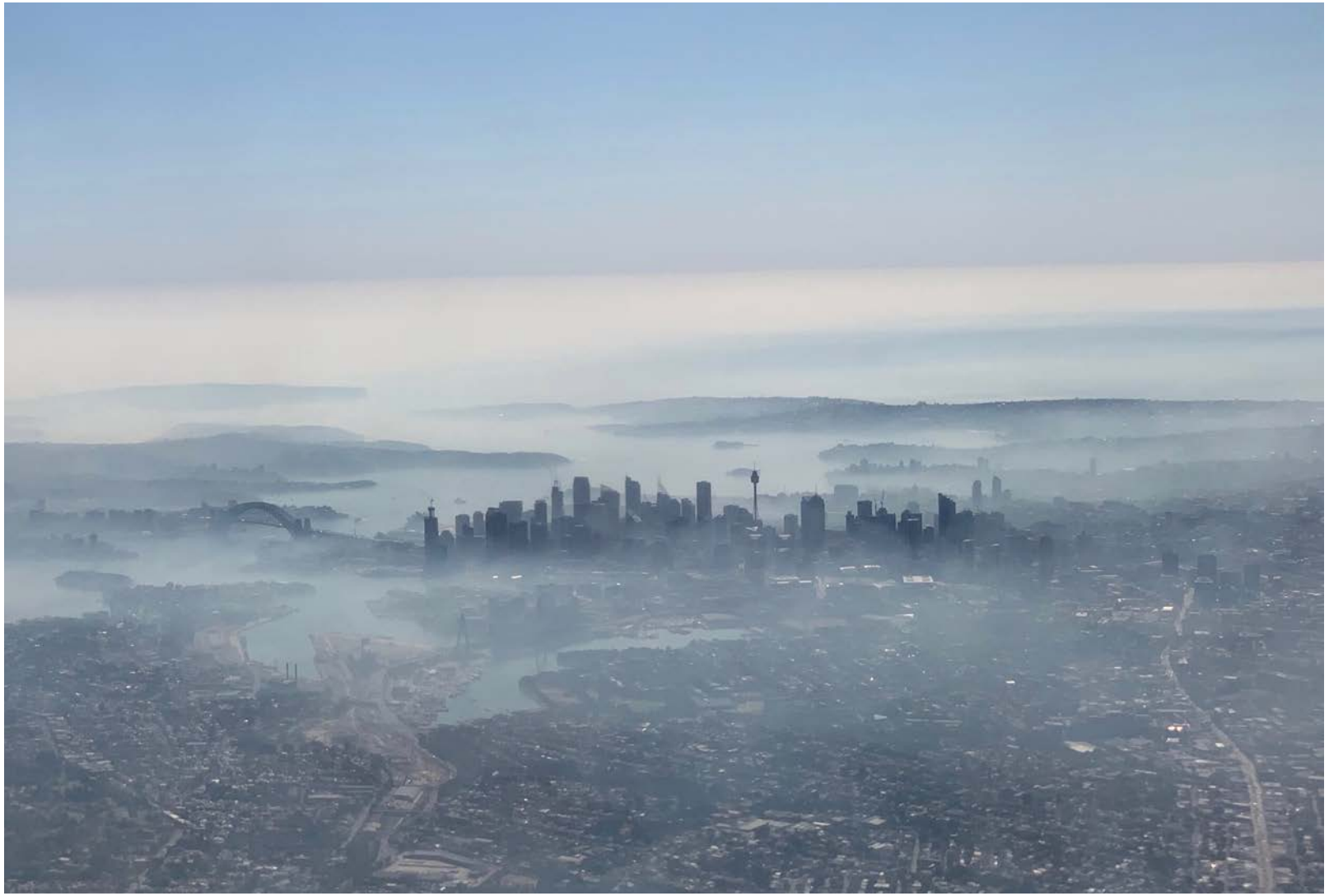
The objectives for resilience at the Bays West are:

- To embed design for a future climate in all design processes using RCP8.5 in 2090 climate scenarios;
- To manage sea level rise and incorporate it productively into a slowly changing landscape;
- To identify mechanisms to manage heat, bushfire (and smoke), flood and storm impacts through extreme events;
- To provide community facilities that support social resilience during major shock events;
- To effectively mitigate climate risk in alignment with the Taskforce for Climate-related Financial Disclosures (TCFD);
- To enable flexible, adaptive and regenerative systems with the capacity to be changed subject to uncertain future pressures.



Climate Risk & Resilience

- Climate positive precinct
  - All electric built environment
  - Zero fossil fuel use for regular building operations
- Design to RCP 8.5 climate scenarios
- Allow safe sea level rise
- Overland flooding
  - All critical equipment and services located above Probable Maximum Flood (PMF) levels
  - All structures below PMF designed to survive flooding
- Provide space for centralised precinct thermal and power utilities
  - Include space for future energy storage (electrical and/or thermal batteries)
- Community facilities designed to serve as gathering places during emergencies and interruptions in services
- Building design guidelines to include resilience and climate positive futures
  - Building location and massing enables solar access and natural ventilation



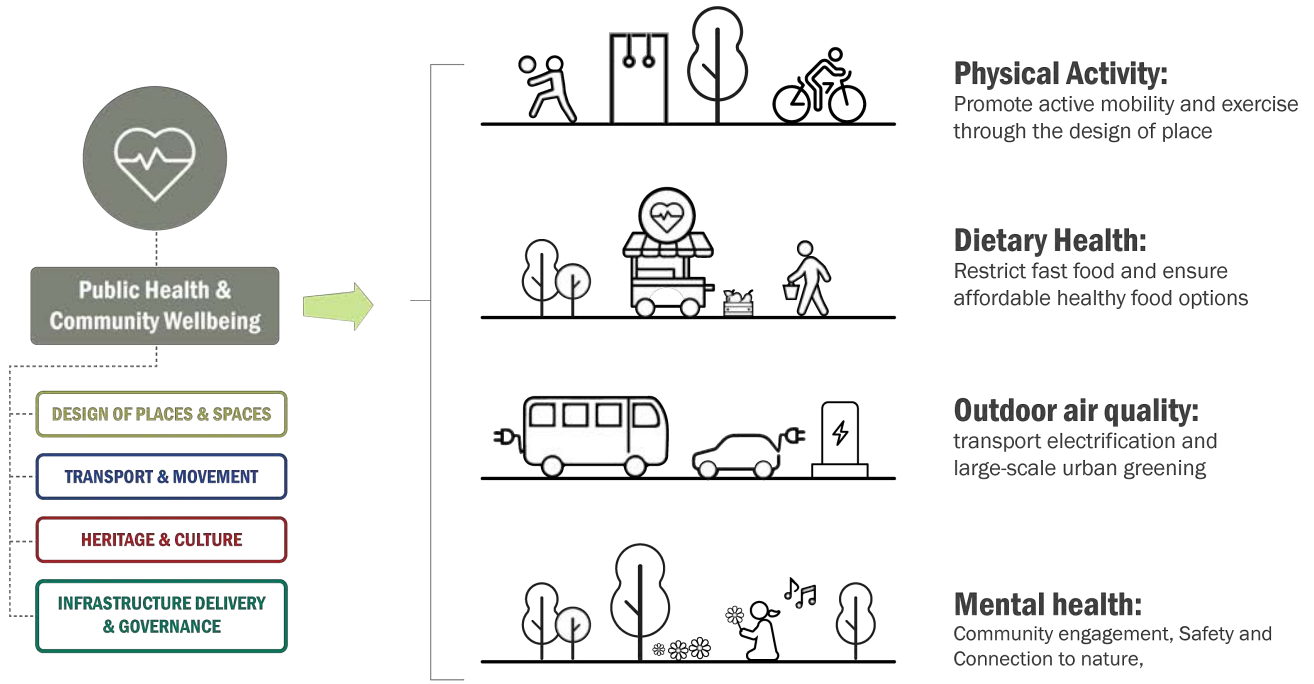
Public Health & Community Wellbeing

The ambition for public health and community wellbeing is to improve public health outcomes through urban renewal and improve wellbeing for precinct users, visitors and the wider community.

The health and wellbeing objective for Bays West is to deliver a place that addresses national health priorities through design and place-making, and improve social cohesion, social connection and strengthen the social fabric.

The design objectives in support of health and wellbeing priorities are

- Supporting diversity and inclusion by ensuring a variety of program types spread across site (residential (incl. social and affordable), commercial, retail, community and cultural offerings);
- Supporting community infrastructure for improved equitable access to services;
- Improving physical activity by encouraging active mobility and recreational exercise through the provision of diverse and high-amenity public outdoor green spaces;
- Improving dietary health by eliminating fast food or junk food from public F&B tenancies and providing healthy and affordable food options;
- Improving local air quality by transport electrification, large-scale urban greening and eliminating on-site combustion with particular focus on arterial road interfaces;
- Improving mental health through connection to sky, water and green, biophilia, safety, sense of belonging;
- Enhancing social engagement through the provision of restorative public gathering spaces.



Public Health & Community Wellbeing

- No combustion
- Electric vehicles
- Infrastructure for public transportation
- Shaded outdoor spaces
- Community space
- Opportunities for edible landscape
- Power and water infrastructure in public realm to support fresh food markets
- Opportunities for lifelong learning and transfer of knowledge through the intersection of an indoor/outdoor library in line with the connection with country memo.

Assurance

It is imperative that sustainability objectives are backed up by an approach to assurance that gives absolute confidence that the claimed outcomes will be achieved. This requires a framework for assurance that covers the sustainability objectives and provides:

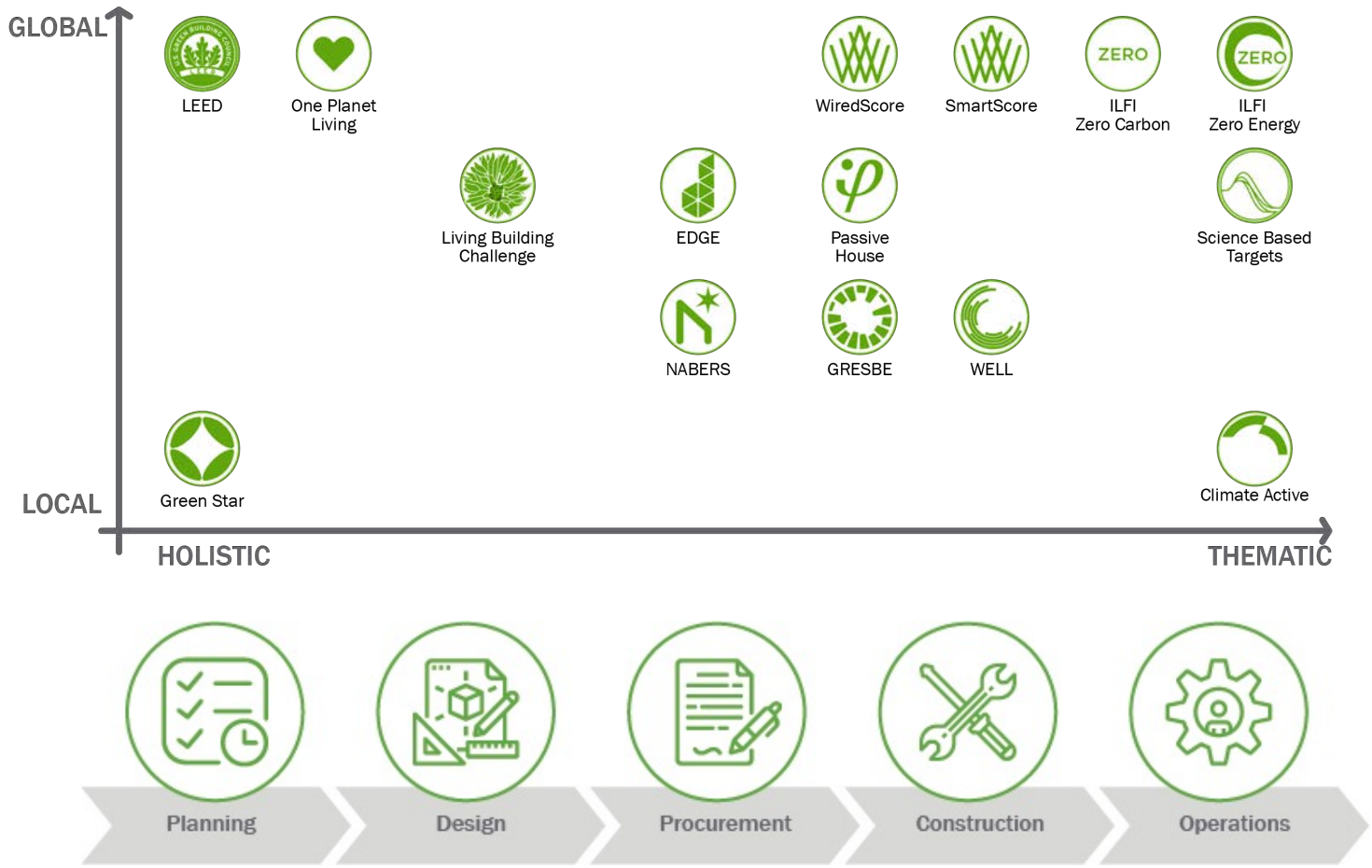
- independent review
- transparency of methodology
- accountability at each phase of the lifecycle

In the property sector, sustainability rating tools are the primary assurance mechanism as they provide independent review, transparency and accountability across all project life-cycle phases. Rating tools also providing a benchmark for global comparison.

The benefits of using existing tools are the capacity to benchmark the project against national and global peers, and also provide certainty for industry participants through the planning, procurement and delivery processes.

Rating tools typically fall into one of two categories:

- holistic sustainability tools addressing several themes
- thematic tools focusing on just one theme



Third-party Certification

As a baseline we recommend targeting Green Star 6 Star certification for both the public domain and all buildings in the development. Green Star is a good all-round method of assurance covering all elements of resource efficiency, resilience, and general best practice important to government, council, stakeholders, and residents.

We also recommend NABERS energy and water ratings for the commercial programs. NABERS provides best practice assurance for building operational performance that is well understood and respected within construction and real estate.

Beyond this, it is suggested that commercial developments have an ambition of WELL Core & Shell certification. The WELL Building tool provides best in class focus on health and wellness, and is becoming new baseline expectation for progressive tenants particularly in the post-COVID era.

Development type	Rating tool	Rating type	Target rating
Public domain	Green Star	Communities	6 Star
All buildings	Green Star	Buildings	6 Star
Commercial buildings	NABERS	Energy	6 Star
		Water	5 Star
	WELL	Core & Shell	Silver

Addendum

Climate Adaptation and Community Resilience Planning

Climate Adaptation and Community Resilience Planning

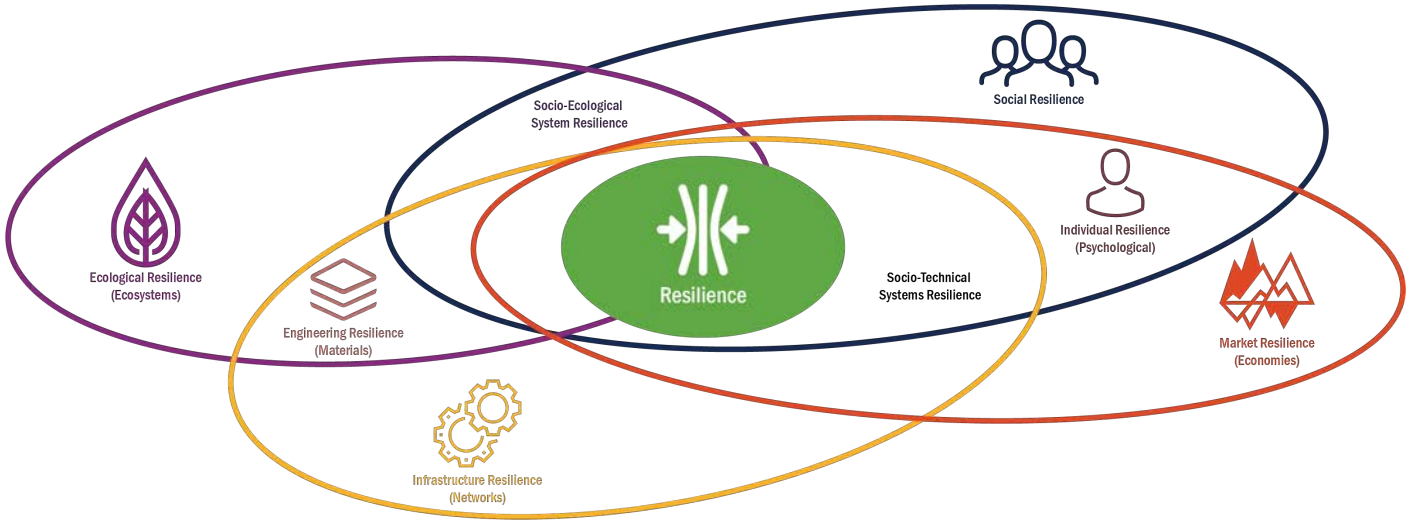
A climate adaptation and community resilience planning process was initiated during the masterplanning stage. The risk management and adaptation planning process is aligned with relevant standards and benchmarking frameworks:

- ISO 31000-2018 – Risk Management – Principles and Guidance
- AS 5334-2013 Climate change adaptation for settlements and infrastructure – A risk based approach
- Climate Change Impacts & Risk Management: A Guide for Business and Government, Australian Greenhouse Office
- Green Star Communities, Green Building Council of Australia

A preliminary risk assessment was prepared based on the findings of a desktop review. A risk register was developed, identifying climate risks and initial likelihood and consequence ratings were allocated for each risk statement in line with criteria outlined by the Australian Greenhouse Office.

The preliminary risk assessment was followed by series of stakeholder engagement activities. During the engagement activities workshops were conducted with project team members and additional external stakeholders to inform the assessment, validate climate risks with the stakeholders, and identify appropriate adaptation responses.

This process will continue to be developed throughout the detailed planning and design phases.



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