Bank Street Park
Blackwattle Bay / Tjerruing

SSD-53386706

Appendix AQ

Sustainability Strategy Report (Atelier 10)

December 2023

Sustainability Strategy

Bank Street Park

Revision 03, November 2023

atelier ten

Strategic Sustainability Advisors + Environmental Designers + ESD Consultants
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Contents

Executive summary

This Sustainability Strategy sets out the key sustainability ambitions for Bank Street Park, and an approach to embed environmental, social, and economic sustainability into the Bank Street Park concept design.

This report is structured into three key sections which develop the narrative and provide the evidence base for its application.

Section 01

Provides a summary response to policy requirement, and links to the relevant part of this Sustainability Strategy that addresses them in detail, including:

- Secretary's Environmental Assessment Requirements (SEARs) for Ecologically Sustainable Development (ESD) at Bank Street Park
- SEPP Sustainable Buildings (2022)
- Sydney LEP 2012
- Blackwattle Bay Design Guidelines

Section 02

Encapsulates the core elements molding Bank Street Park's sustainable trajectory. It highlights the purpose-driven methodology, regulatory alignment, industry influences, and urban research integration that collectively frame the project's development.

- Purpose and Approach: The purpose-driven approach of this sustainability strategy is evident in its design to guide Bank Street Park's sustainable development across all stages, informed by research and engagement, ensuring a resilient and inclusive urban park.
- Background: The contextual backdrop shapes Bank Street Park's identity, as it occupies a crucial space within Blackwattle Bay, the Bay's Precinct, and Pyrmont peninsula.
- Site Context: An analysis of strengths, weaknesses, opportunities, and constraints highlights key factors influencing Bank Street Park's development potential.
- Policy and Planning Framework: Delves into the interplay of regulatory mandates and guiding documents to form the developmental framework within which the park operates.
- Development Environment: An understanding of the industry context, coupled with insights from rating tools, facilitates the integration of sustainable design principles.
- Urban Research: Case studies and advanced urban research offer insights and perspectives, enriching the strategy's foundation.

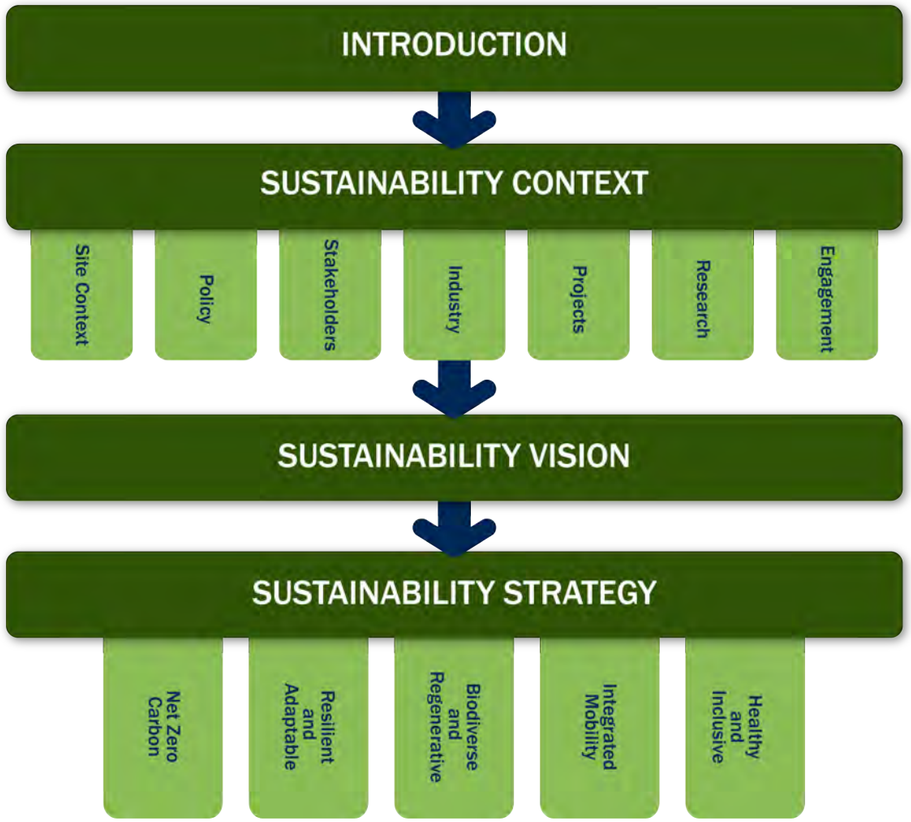
Section 03

Introduces Bank Street Park's overarching Sustainability Vision and proposes a series of sustainability Principles that reflect development ambitions, statutory requirements, industry and community expectations, and sustainability challenges in the built environment. The six principles outlined are:

- Net Zero Carbon | Bank Street Park will lead the way in adopting a comprehensive climate-positive approach that encompasses all stages of development, from design and construction to daily operations, setting a new environmental standard within its immediate precinct.
- Resilient and Adaptable | Bank Street Park seeks to lead in forward-looking development, ensuring resilience and adaptability to thrive amidst challenges while fostering a strong community fabric.
- Biodiverse and Regenerative | Forge a renewed connection with nature at Bank Street Park, remediating its industrial history to establish a haven for biodiversity and ecological renewal along Blackwattle Bay.
- Integrated Mobility | Bank Street Park envisions a seamlessly sustainable mobility ecosystem, empowering residents with efficient, carbon-neutral transportation that harmonises with nature, enhancing daily life and urban resilience.
- Healthy and Inclusive | Bank Street Park will create a place that is welcoming to all people, regardless of their age, size, gender, culture, disability or ability, and enrich the health and wellness of visitors and the community.

To structure a delivery approach, this Sustainability Strategy builds on the sustainability principles and for each describes:

- Ambition | what will Bank Street Park do for sustainability
- Rationale | why this is critical to delivering a successful and sustainable place
- Objectives | fundamental outcomes which represent positive achievement
- Benchmarks | quantifiable indicators which align with existing policies or frameworks
- Opportunities | potential actions to deliver sustainability across the development lifecycle
- Supports | specific frameworks or policies that it contributes to or facilitates



01 IMPLEMENTATION

1.1 SEARs Requirements

The following table responds to the Ecologically Sustainable Development (ESD) SEARs requirements as provided.

This report has been prepared in response to the relevant requirements outlined within the Planning Secretary's Environmental Assessments Requirements (SEARs) issued on 11 May 2023 for application SSD-53386706. Table 1.1 addresses the relevant SEARs requirements and provides a project response.
The SEARs requirements are addressed in this Sustainability Strategy report and Enspire's Stormwater Management Report .

To interprete these tables, policy requirements are in black text in the Policy Requirements and Summary Responses columns, with Atelier Ten's response in green.

Table 1.1 Sustainability SEARs Requirements

SEARs Requirement	Summary Response	Where addressed
Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development.	Section 193 - The principles of ecologically sustainable development are the following: (a) the precautionary principle, Response: There is no threat of serious or irreversible environmental damage, with the sustainability approach and strategy focusing on environmental remediation and preservation of existing ecology and habitats. (b) inter-generational equity, Response: The sustainability strategy implements strategies that greatly improves the health, diversity and productivity of the environment for future generations to benefit from, aligning with precinct and government documents that aim to improve the environment and create sustainable environments and places for future generations. (c) conservation of biological diversity and ecological integrity Response: Biological diversity is considered in section 3.4 'Biodiverse and Regenerative' of the sustainability strategy which aims to promote existing biodiversity such as native vegetation types, migratory birds, mammals and aquatic life through the initiatives recommended. Ecological integrity is also considered in the sustainability strategy with recommendations such as retaining significant trees. (d) improved valuation, pricing and incentive mechanisms. Response: Not relevant.	3.4 Biodiverse and Regenerative - Planning, Design and Operational Initiatives 3.5 Healthy and Inclusive: - Planning, Design and Operational Initiatives 3.4 Biodiverse and Regenerative - Planning, Design and Operational Initiatives
Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.	Bank Street Park will contribute to achieving Green Star Communities 5 star rating (minimum) for the Blackwattle Bay Precinct.	3.2 Net Zero Carbon
Demonstrate how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive urban design) and material resources.	The sustainability strategy outlines that Bank Street Park will exceed net zero emissions by 2050 through aligning with the Blackwattle Bay Design Guidelines which aims for a net-zero carbon precinct by 2041. The "Net Zero Carbon" section of the Sustainability Strategy outlines initiatives for Bank Street to minimise greenhouse gas emissions, energy consumption and material resources. The development will minimise water consumption through WSUD as outlined in the Enspire Stormwater Management Report and "Resilient and Adaptable" section of the Sustainability Strategy.	3.2 Net Zero Carbon 3.3 Resilient and Adaptable
Demonstrate how the development will be designed and constructed to reduce overall potable water consumption and address water run off quality and volume issues from operations.	The sustainability strategy recommends design initiatives for reducing potable water consumption in section 3.3 Resilient and Adaptable, including: Enable connection to exiting or future recycled water network identified in Mott MacDonald's Bank St Park Infrastructure Delivery, Management & Staging Plan Report Use recycled water from recycled water network for non-potable uses (e.g. toilet flushing, landscape irrigation, dragon boat cleaning) Installing water saving fixtures and appliances can provide significant water use savings Also, reference to the Enspire Stormwater Management Report to address water quality runoff.	3.3 Resilient and Adaptable Bank St Park Infrastructure Delivery, Management & Staging Plan Report, Mott MacDonald Stormwater Management Report, Enspire

1.2 Policy Requirements

The following table responds to various policy document requirements.

Policy:
- SEPP Sustainable Buildings (2022)
- Sydney LEP 2012
- Blackwattle Bay Design Guidelines

Table 1.2 Sustainability Policy Requirements

Policy	Policy Requirements relevant for Sustainability	Where addressed
SEPP Sustainable Buildings (2022)	Chapter 3 Standards for non-residential development 3.1 Application of Chapter (1) This Chapter applies to development, other than development for the purposes of residential accommodation, that involves— (a) the erection of a new building, if the development has a capital investment value of $5 million or more (b) alterations, enlargement or extension of an existing building, if the development has a capital investment value of $10 million or more.	
	3.2 Development consent for non-residential development (1) In deciding whether to grant development consent to non-residential development, the consent authority must consider whether the development is designed to enable the following— (a) the minimisation of waste from associated demolition and construction, including by the choice and reuse of building materials, • Reuse brickwork from existing buildings – Seating and planting in existing building 'ruins' (Oculus) – Reuse of existing building brickwork for paving	(a) 3.2 Net Zero Carbon - Design and Operational Initiatives
	(b) a reduction in peak demand for electricity, including through the use of energy efficient technology, • Reduce lighting energy and overlighting through energy efficient LED lighting and monitoring/smart lighting systems • Adopt the use of energy-efficient mechanical systems, specifically focusing on the integration of high-efficiency heat pumps for heating, cooling, and hot water needs.	(b) 3.2 Net Zero Carbon - Planning, Design and Operational Initiatives
	(c) a reduction in the reliance on artificial lighting and mechanical heating and cooling through passive design, • Optimise all façades to shade glazing to reduce cooling energy use yet provide high quality daylighting. • Maximise the free cooling provided by outdoor air through design for cross ventilation, and night purging. • Green roof with solar panels reduces heat transfer to the building • Partially submerge dragon boat storage building into the earth, leveraging the natural insulative properties of the ground to significantly improve thermal efficiency, reducing reliance on artificial heating and cooling systems, and contribute to energy savings. • Integrate high performance facades eliminate thermal bridging, condensation, and water penetration	(c) 3.2 Net Zero Carbon - Design Initiatives
	(d) the generation and storage of renewable energy, • Integrate solar panels on rooftop of the community building to capture solar energy.	
	(e) the metering and monitoring of energy consumption, • Implement individual building metering to monitor and manage energy consumption. • Ensure the continous monitoring of energy and electricity consumption and adaptability for reduced consumption	(d) 3.2 Net Zero Carbon - Planning Initiatives and 3.7 Renewable Energy Generation
	(f) the minimisation of the consumption of potable water. • Enable connection to exiting or future recycled water network identified in Mott MacDonald's Bank St Park Infrastructure Delivery, Management & Staging Plan Report • Use recycled water from recycled water network for non-potable uses (e.g. toilet flushing, landscape irrigation, dragon boat cleaning) • Installing water saving fixtures and appliances can provide significant water use savings	(e) 3.2 Net Zero Carbon - Operational Initiatives
	(2) Development consent must not be granted to non-residential development unless the consent authority is satisfied the embodied emissions attributable to the development have been quantified. Emodied emissions have been quantified in the Altus report.	(f) 3.3 Resilient and Adaptable Design

Policy	Policy Requirements relevant for Sustainability	Where addressed
Sydney LEP 2012	6.68 Erection of Buildings (1) This clause applies to development involving the erection of a building in the Blackwattle Bay Precinct. (2) Development consent must not be granted to development on the land unless the consent authority is satisfied— (a) the development is consistent with the Blackwattle Bay Design Guidelines d) appropriate measures will be taken to ensure the building is capable of achieving— (i) a Green Star building rating with a "credit achievement" in Credit 22: Energy Use, or (ii) a standard the consent authority is satisfied is equivalent to the standard specified in subparagraph (i), (e) public utility infrastructure essential for the development is available, or adequate arrangements have been made to make the infrastructure available when it is required, (3) In this clause— Green Star building rating means a certified sustainability rating given by or on behalf of the Green Building Council of Australia. public utility infrastructure includes infrastructure for the following— (a) the supply of water, (b) the supply of electricity, (c) the disposal and management of sewage.	(2)(a) Sustainability strategy aligns with the Blackwattle Bay Design Guidelines (2)(d.i) 3.2 Net Zero Carbon provides initiatives to contribute to this. (e) INSW statement regarding Precinct Scale Utilities: *The opportunity for precinct-scale facilities to improve sustainability outcomes is currently being investigated by Infrastructure NSW on the basis that the development of the broader precinct will provide the critical mass of demand and utilisation required to catalyse investment. Bank Street Park will be integrated into potential future precinct scale utilities as a customer.* *The initial investigations will outline the technical parameters, sustainability dividends, governance and community benefits sought, for market testing when Infrastructure NSW seeks a development partner for the existing Sydney Fish Markets site. The initial investigations will also outline the potential for any easements under Bank Street Park that might be beneficial for accessing harbour heat rejection, which will be addressed in subsequent approvals.*

Blackwattle Bay Design Guidelines	Principle 4: Pursue leading edge sustainability outcomes including climate change resilience, improved water quality and restoration of natural ecosystems. • Integrate solar panels on rooftop of the community building to capture solar energy. • Design landscapes with a mix of native trees, shrubs, and vegetation that have high carbon sequestration potential. • Incorporate planting strategies that encourage healthy soil ecosystems, enhancing carbon storage in the ground. • Integrate green infrastructure elements, such as rain gardens and bioswales, that help absorb and store carbon. • Incorporate water sensitive urban design (Enspire Stormwater Management Report): – Filter baskets within surface inlet stormwater pits for sediment collection. – Bioretention tree pits for water quality improvement - Trees within the promenade will include stratacell with filter media. – Vegetated swales for water quality improvement. – Proprietary storm filters for water quality improvement.	4. Planning, design and operational initiatives in 3.2 Net Zero Carbon, 3.3 Resilient and Adaptable and 3.4 Biodiverse address Principle 4 sustainability outcomes.
	Principle 5: Deliver development that is economically, socially, culturally and environmentally viable. This Sustainability Strategy marks the beginning of a considered and coordinated approach to the implementation of sustainability at Bank Street Park. It is designed to guide infrastructure investment in the park across all stages of the project lifecycle from planning and design, to construction and operation. This document represents the outcome of a research and engagement process designed to direct its efforts to areas most meaningful to the overarching goal to become a resilient and inclusive urban park contributing to health, wellness and overall sustainability.	5. 2.1 Purpose and Approach, 3.6 Healthy and Inclusive - planning and operational initiatives, 3.4 Biodiverse - Planning and design initiatives
	Relevant Objectives: • Provide high quality, integrated, permeable and multifunctional public spaces that cater for movement, recreation and social interaction. • Community building with cafe in close proximity to recreational facilities and dragon boat/water sport facilities • Waterfront promenade encourages physical activity and active mobility • Places for rest including landscape seating wall, rammed earth seatings, shaded structures and bench seats • Nature-based inclusive playspace for ages 2-12	3.6 Healthy and Inclusive - Planning, design and operational initiatives
	4 Environmental Management and Sustainability Summary: • Establish benchmarks to help deliver a net-zero carbon precinct by 2041 • Integrate solar panels on rooftop of the community building to capture solar energy. • Prioritise low embodied carbon materials. • Reuse brickwork from existing buildings – Seating and planting in existing building ‘ruins’ (Oculus) – Reuse of existing building brickwork for paving • Implement individual building metering to monitor and manage energy consumption. • Adopt the use of energy-efficient mechanical systems, specifically focusing on the integration of high-efficiency heat pumps for heating, cooling, and hot water needs. • Set high standards and targets for waste diversion from landfill and commence the path towards a circular economy. • Implement a clear waste separation system with educational signage to encourage proper waste disposal. • Consider building’s end-of-life and demolition, where materials can be recycled • Choose low embodied carbon materials and products for major building systems (structure, cladding, foundations, etc.). – Recycled sustainable sandstone seating wall • Green roofs provide aesthetic quality, cool air temperature and bird habitat • Green roofs where not used for solar PV • Contribute to goal of 5 star Green Star Communities rating • Contribution through sustainability strategy initiatives • 100% of precinct powered by renewable energy • Integrate solar panels on rooftop of the community building to capture solar energy. • PV analysis • 100% of irrigation is recycled water in public spaces • Enable connection to exiting or future recycled water network identified in Mott MacDonald’s Bank St Park Infrastructure Delivery, Management & Staging Plan Report • Minimum of 80% contruction, demolition and operational waste diverted from landfill • Implement a clear waste separation system with educational signage to encourage proper waste disposal. • Consider building’s end-of-life and demolition, where materials can be recycled	4. See INSW statement above regarding Precinct Scale Utilties. 3.2 Net Zero Carbon, 3.3 Resilient and Adaptable and 3.4 Biodiverse planning, design and operational initiatives support these benchmarks. 4.5 (4) - 3.3 Resilient and Adaptable - Design Initiatives, materiality also addressed in 3.2 Net Zero Carbon 4.5 (8) - 3.3 Resilient and Adaptable - Planning initiatives and 3.5 Integrated Mobility Planning initiatives 4.7 (3) - 3.3 Resilient and Adaptable - Planning initiatives and Enspire Stormwater Management Report 4.7 (4,5,7) - Refer to Enspire Stormwater Management Report.

4.5 Urban Heat Management and reflectivity

4. Light reflectivity from building materials used on facades is not to exceed 20%
Implemented by Oculus and Collins & Turner

8. Use pavements and other materials which are permeable (where appropriate), light coloured, reflective or “cool”.
Use materials e.g. light coloured and shading, for pathways that provide cooling for users

4.7 Water Management

3. WSUD measures are to be incorporated into streets where practicable.

- Incorporate water sensitive urban design (Enspire Stormwater Management Report):
  - Filter baskets within surface inlet stormwater pits for sediment collection.
  - Bioretention tree pits for water quality improvement
    - Trees within the promenade will include stratacell with filter media.
  - Vegetated swales for water quality improvement.
  - Proprietary storm filters for water quality improvement.

4. Public open space is to be irrigated with recycled water.
Enable connection to exiting or future recycled water network identified in Mott MacDonald’s Bank St Park Infrastructure Delivery, Management & Staging Plan Report

5. On-site water capture and reuse is to be provided in all developments and used to water vegetation in parks and public spaces.
Water capture via roof to rainwater tanks is not being pursued due to solar panels and green roof, however Mott MacDonald has identified possible connection to existing or future recycled water network

6. Opportunities to reuse water in the landscape through WSUD are to be maximised.
Mott MacDonald has identified possible connection to existing or future recycled water network and reference Enspire for recycled water use through WSUD.

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3 Public Space, 3.5.1 Foreshore Promenade:

2 The design of the promenade is to:

a. maximise accessibility from surrounding streets and be accessible for all people

- Enhanced pedestrian connections:
  - Pedestrian linkages to existing and future public transport services (bus stops at Miller Street, Fish Market light rail stop and future metro stations)
  - Raised zebra crossing on Bank Street
  - Primary BSP pathway (6m wide) facilitates desire line to waterfront
  - 3m width for Bank Street footpaths

3.5.1 (2) (a) - 3.5 Integrated Mobility - Planning and operational initiatives
3.5.1 (2) (b) - 3.4 Biodiverse - Planning initiatives
3.5.1 (2) (c) - 3.5 Integrated Mobility - Planning and design initiatives

3.5.1 (2) (d) - 3.6 Healthy and Inclusive - Planning Initiatives

b. provide space for the planting of a continuous row of mature trees

- The park achieves 30% minimum tree canopy cover, with an anticipated 40% canopy coverage at maturity (Oculus).
- According to City of Sydney Assessment the site achieves 47% canopy cover, which excludes hard courts and buildings (Oculus).

c. provide space for walking, cycling, running, strolling and be capable of supporting events, such as fun runs, cycle and school sports

- Primary BSP pathway (6m wide) facilitates desire line to waterfront
- Fully separated pedestrian and bicycle pathways on Bank Street
  - Future cycleways to connect to Anzac Bridge and Glebe Island Bridge cycleways
  - 30 bicycle parking spaces provided in spaces of passive surveillance
  - 2.6m bi-directional cycleway with buffer zones

d. provide space for dwelling, including dedicated areas or space for sitting and rest with appropriate street furniture and infrastructure with consideration of sunlight in winter and shade in summer

- Places for rest including landscape seating wall, rammed earth seatings, shaded structures and bench seats

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3.4 Tree Canopy, street trees and landscaping

2. A minimum canopy cover of 60% to streets, 45% to the foreshore promenade and 30% to parks and 30% to private property is to be achieved.
The park achieves 30% minimum tree canopy cover, with an anticipated 40% canopy coverage at maturity (Oculus).
3.4 (2) - 3.4 Biodiverse - Benchmarks and Planning initiatives

5. When selecting tree species for planting, species that salt-tolerant, resilient to high winds, and have a strong tolerance to future rainfall/drought conditions are to be prioritised. Tree placement can also seek opportunities to provide wind mitigation effects.
Locally-sensitive plant species which require little irrigation and maintenance and easily adapt to site conditions e.g. salt tolerant and high winds
3.4 (5) - 3.4 Biodiverse - Benchmarks and Planning initiatives

6. Where appropriate, new vegetation should consist of species endemic to Blackwattle Bay, especially acknowledging the Tjerruing (Callicoma serratifolia) and Dahl’wah (Causarina glauca) as important species, in consultation with Aboriginal people.
3.4 (6) - 3.4 Biodiverse - Benchmarks and Planning initiatives

- Predominantly endemic plant species which improve chances of attracting local birds and insects to help with the local ecosystem, such as PCT 3594.
- Endemic planting that represents Country such as garden beds throughout the park

3.5 Open Space 2. Landscaping and design of public open space is to be of high quality, creating interest, consistency and character through thoughtful site planning, adaptable spaces, generous amenities, extensive canopy tree planting, biodiverse planting, well integrated public art, and quality materials and furniture. • Artwork integrated in the public realm to create vibrance and reflection on culture and history • Endemic planting that represents Country such as garden beds throughout the park 3. Landscape design is to acknowledge the original foreshore and integrate First Nations perspectives and connection to the landscape in the design (see Sections 2.5 and 9.1). • Endemic planting that represents Country such as garden beds throughout the park • Include diverse practitioners and prioritise Aboriginal artists – Large scale art canvas on the multi purpose court – Blak Diggers revealing history and truth telling: - facade treatment - shelter integration - ground plane integration - lighting integration - embedding language on site • Revealing story of Eora Fisherwomen: – Landscape structure e.g. shelter – Paving of dragonboat storage – Viewing platform timber decking • Acknowledgement of Bank Street Park's history including Aboriginal, colonial and migrant history – etched interpretive wording – Remnant heritage foundations/buildings • Celebrate place based stories	3.5 (2) - 3.6 Healthy and Inclusive - Planning and Design Initiatives, 3.4 Biodiverse - Benchmarks and Planning initiatives 3.5 (3) - 3.6 Healthy and Inclusive - Design Initiatives
4. Public open space is to be designed in accordance with the principles of Crime Prevention Through Environmental Design (CPTED). In particular, the design should provide for: a. open sightlines and landscaping that allows high levels of public surveillance • Views to the water from the park • Passive surveillance within the park c. lighting in accordance with the City of Sydney's Lighting Design Code and designs out any potential 'hiding spots' • Install smart lighting in public spaces that is remote controllable and event configurable and is sensitive to light pollution • Passive surveillance within the park d. legible entrances to encourage public use of the open space. • Various signage types to enforce sense of place and legible wayfinding, including: legible, interpretive, multilingual operational and bespoke 6. Shading and seating arrangements are to consider climate change projections, particularly those related to extreme heat and the number of hot days. • Places for rest including landscape seating wall, rammed earth seatings, shaded structures and bench seats 7. Public open space design must consider flood impact and sea level rise considerations informed by flood modelling, including assessment of impacts and any mitigation required. • It is expected that the future development will need to account for a 1% AEP flood level in the 2100 Climate Horizon. This accounts for a 23% increase in rainfall intensity and sea level rise of 1.3m (upper end of the 95% confidence interval projections	4 (a) - 3.6 Healthy and Inclusive - planning initiatives 4 (c) - 3.6 Healthy and Inclusive - planning initiatives 4 (d) - 3.5 Integrated Mobility - design initiatives 6 - 3.2 Net Zero Carbon - planning initiatives 6 - Refer to Oculus Bank Street Design Report 7 - 3.3 Resilient and Adaptable - planning initiatives
5 Transport, Moving and Parking 5.3 Pedestrian footpaths, walkways and crossings a. Easy to cross b. Shade and shelter c. Places to stop and rest d. Not too noisy e. People feel safe f. Quick and direct g. Ample provision of space and distance between pedestrians on footpaths h. Variety	5.3 (a-h) - 3.5 Integrated Mobility - planning and design initiatives, 3.6 Healthy and Inclusive - planning initiatives, also refer to Oculus Bank Street Design Report and Bank Street Park Transport and Accessibility Impact Assessment
• Enhanced pedestrian connections: – Pedestrian linkages to existing and future public transport services (bus stops at Miller Street, Fish Market light rail stop and future metro stations) – Raised zebra crossing on Bank Street – Primary BSP pathway (6m wide) facilitates desire line to waterfront – Provisions for future connection to Glebe Island Bridge – 3m width for Bank Street footpaths – Use materials e.g. light coloured and shading, for pathways that provide cooling for users	5.4 (1-3) - 3.5 Integrated Mobility - planning and initiatives, also refer to Bank Street Park Transport and Accessibility Impact Assessment
• Views to the water from the park • Passive surveillance within the park • Places for rest including landscape seating wall, rammed earth seatings, shaded structures and bench seats	5.5 (1) - 3.5 Integrated Mobility - planning initiatives and Figure 3.4

6.4 Community and cultural uses 1.b. a community centre space of a minimum of 400 square metres (GFA) in a location that enables its use as a boat house/club house, such as Bank Street Park. The facility should accommodate existing dragon boat, kayak and canoe paddlers as well as be available for use as general multipurpose community meeting and activity space • Community building with cafe in close proximity to recreational facilities and dragon boat/water sport facilities	6.4 (1.b.) - 3.6 Healthy and Inclusive - planning initiatives, also refer to Oculus Bank Street Design Report
5.4 Bicycle Network and Infrastructure 1. The cycle network within the Precinct is to be generally in accordance with Figure 30. • Refer to transport report for cycle network. 2. Deliver bicycle infrastructure that accommodates and separates recreational and commuter users with appropriate infrastructure. Bicycle connections should align with surrounding existing and planned bicycle network to support accessibility to and from the site and surrounding areas. • Fully separated pedestrian and bicycle pathways on Bank Street – Future cycleways to connect to Anzac Bridge and Glebe Island Bridge cycleways – 30 bicycle parking spaces provided in spaces of passive surveillance – 2.6m bi-directional cycleway with buffer zones – Implement vegetation on buffer zones to promote biophillia and biodiversity – Plant trees along pathways and cycleways to provide shade and thermal comfort for people – Public through site links to the foreshore from Bank Street • Refer to transport report for cycle network. 3. Public bicycle parking facilities are to be provided in the public domain with convenient access to commuter and recreational cycleways in the Precinct. • Bicycle parking located in public space with good passive surveillance and close to cycleways 5.5 Public Transport 1. Development is to be designed to facilitate easy, efficient and safe connectivity to existing and proposed public transport (Figure 31). Transport for NSW is to be consulted during the design development stage in this regard. • Enhanced pedestrian connections: – Pedestrian linkages to existing and future public transport services (bus stops at Miller Street, Fish Market light rail stop and future metro stations) – Raised zebra crossing on Bank Street – 3m width for Bank Street footpaths – Use materials e.g. light coloured and shading, for pathways that provide cooling for users • Bicycle parking located in public space with good passive surveillance and close to cycleways • Public and active transport links are the main transport nodes.	

02 CONTEXT

2.1 Purpose and Approach

2.1.1 Purpose

This Sustainability Strategy marks the beginning of a considered and coordinated approach to the implementation of sustainability at Bank Street Park. It is designed to guide infrastructure investment in the park across all stages of the project lifecycle from planning and design, to construction and operation.
This document represents the outcome of a research and engagement process designed to direct its efforts to areas most meaningful to the overarching goal to become a resilient and inclusive urban park contributing to health, wellness and overall sustainability.

2.1.2 Approach

This framework documents an approach to sustainability that incorporates two discrete exercises conducted in succession.
The first exercise is designed to explore the current context of sustainability relevant to this particular organisation in this place. It puts Bank Street Park and it's relationship with Pyrmont and broader NSW state government goals into context, and provides an evidence-base for future decision making. This initial research piece (as demonstrated by Figure 2.1 includes:

- Site | contextual analysis of physical and environmental conditions in the Pyrmont region
- Policy | statutory and regulatory planning framework in which the organisation operates
- Industry |
- Projects | benchmark projects with aspects relevant to Bank Street Park
- Engagement | meetings and workshops with relevant Government organisations and stakeholders

The second exercise synthesises this research into a Bank Street Park-specific Sustainability Vision and Framework for delivery. This Sustainability Framework builds on the sustainability Themes and for each describes:

- Ambition | what will Bank Street Park do for sustainability
- Rationale | why this is critical to delivering a successful and sustainable place
- Objectives | fundamental outcomes which represent positive achievement
- Benchmarks | quantifiable indicators which align with existing policies or frameworks
- Opportunities | potential actions to deliver sustainability across the development lifecycle
- Supports | specific frameworks or policies that it contributes to or facilitates

Figure 1.1 Evidence base supporting sustainability ambition and vision (Source: Atelier Ten)

2.2 Background

2.2.1 Introduction

The purpose of this report is to to support a State Significant Development Application (SSDA) for a new waterfront public park within Blackwattle Bay, to be known as Bank Street Park (SSD-53386706). Bank Street Park is located at 1A-19 Bank Street, Pyrmont on the shoreline of Tjerruing Blackwattle Bay and adjacent areas of Blackwattle Bay.

2.2.2 Blackwattle Bay Precinct

Bank Street Park forms part of the Blackwattle Bay Precinct, which is an area of predominantly government owned land located on the western edge of the Pyrmont Peninsula and adjoining the waters of Blackwattle Bay (Figure 2.8).

The precinct was rezoned in December 2022 to facilitate a new mixed-use community, providing for around 2,000 new residents and 5,600 new jobs and creating a vibrant 24/7 economy. Updated planning and land use controls were incorporated into the Sydney Local Environmental Plan 2012, along with site specific design guidance in the Blackwattle Bay Design Guidelines.

A critical part of the Blackwattle Bay Precinct is the high quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

2.2.3 Site description

Bank Street Park is located at 1A-19 Bank Street, Pyrmont NSW within the City of Sydney local government area (LGA) and includes harbour development in Blackwattle Bay. The site area is 1.9 hectares, including 0.7 within the harbour. The relevant lot and deposited plans and the respective ownership for the site are detailed in Table 1 and shown in Figure 2.

Table 2.1 Summary of land title details of the site

Street address	Lot and Deposited Plan details	Ownership
1A Bank Street, Pyrmont NSW 2009	Lot 1 DP 85206 Lot 1 DP 188671	Transport for NSW
1-3 Bank Street, Pyrmont NSW 2009	Lots 1-2 DP 1089643 Lot 1 DP 439245	Infrastructure NSW
5 Bank Street, Pyrmont NSW 2009	Lot 20 DP 803159	Transport for NSW
7 Bank Street, Pyrmont NSW 2009	Lot 19 DP 803159	Transport for NSW
9 Bank Street, Pyrmont NSW 2009	Lot 21 DP 803159	Transport for NSW
11 Bank Street, Pyrmont NSW 2009	Lot 22 DP 803159	Transport for NSW
17-19 Bank Street, Pyrmont NSW 2009	Lots 5-6 DP 803160	Transport for NSW
Sydney Harbour	Lot 5 DP 1209992	Roads and Maritime Services (Transport for NSW)
Sydney Harbour	Lot 107 in DP 1076596	Transport for NSW
Part Bank Street road reserve	N/A	City of Sydney Council

Bank Street Park is located on Gadigal Land, one of the twenty-nine clans of the great Eora Nation. It adjoins the foreshores of Glebe to the west and Pyrmont Bridge Road and Wentworth Park to the south.

2.2.4 Proposed development

Development consent is being sought for a recreation area for the primary purpose of a public park, comprising:

- Site preparation works, including tree removal, earthworks and remediation to facilitate the proposed use;
- Demolition of three existing buildings at 1-3 Bank Street;
- New and adapted facilities for community use, including:
  - New single storey building to accommodate flexible community space, café, and marina office/store facilities, with green roof and photovoltaics;
  - Adaptive reuse of Building D for public amenities, bin and other storage;
  - Boat launching ramp and pontoon for passive watercraft, including dragon boats and kayaks;
  - Boat storage building with change facilities for dragon boat users with publicly accessible rooftop deck;
- Public domain works, including:
  - 'Interpretation Garden' in existing building 'ruins' at 1-3 Bank Street;
  - Split level foreshore promenade;
  - Multi-purpose court with edge seating and partial fence;
  - Nature-based inclusive playspace for ages 2-12;
  - Fitness equipment;
  - Public plaza and grassed open space areas;
  - New tree plantings and planter beds;
  - Public art, wayfinding and interpretative signage, lighting, bike parking and seating;
- Harbour works including:
  - Overwater boardwalk;
  - Land/water interface works, including sandstone terracing into water and support structure, to improve marine habitat;
  - Demolition and construction of a new timber launching ramp for dragon boats;
  - Kayak/passive craft pontoon; and
  - Restoration, repair and alterations to the existing seawall for new stormwater outlets.
- Works to Bank Street road reserve, including:
  - Road space reallocation to provide separated cycleway;
  - Cycleway transition to Bank Street to continue south as part of future works;
  - Reinstatement of existing on-street parallel parking;
  - Tree planting;
  - Accessible parking space; and
  - Loading zone adjacent 1-3 Bank Street.

Key area schedule and calculations

Built Form

Table 2.2 Buildings and structures schedule and calculations

Item	Area (GFA)
Building D	
Bin store	35 m^2
Placemaking store	37 m^2
Amenities	61 m^2
Total	133 m^2
Dragon Boat Buildings	
Café / Kiosk	58 m^2
Marina store	120 m^2
Marine office	71 m^2
Community space	133 m^2
Amenities	33 m^2
Plant	10 m^2
Total	425 m^2
Dragon Boat Building	
Boat store	420 m^2
General store	64 m^2
Total	484 m^2

Landscaped Area

Table 2.3 Landscaping schedule and calculations

Item	Description
No. of existing trees	23
No. of trees proposed for removal	17
No. of trees proposed to be retained	6
No. of trees proposed for planting	114
Total no. of trees	120
Existing tree canopy cover	760 m^2 (7%)
Proposed tree removal canopy cover	396 m^2 (3%)
Proposed tree canopy cover as part of landscaping works	4244 m^2 (37%)
Total tree canopy cover	4608 m^2 (40%)
Proposed pervious area	5204 m^2 (45%)
Impervious area (court, paths etc)	6252 m^2 (55%)
Proposed deep soil	4105 m^2 (36%)

Figure 1.1 Blackwattle Bay Precinct (Source: INSW)

Figure 1.1 Site context map - the indicative site location is outlined in red. (Source: SixMaps with Architectus edits (2023))

Figure 1.1 Bank Street Park site location within Blackwattle Bay State Significant Precinct. The indicative site location is outlined in red. (Source: Blackwattle Bay Design Guidelines with Architectus edits (2023))

2.3 Site context

This Sustainability Framework aims to represent and provide direction to all stakeholders, while also taking into consideration the wider vision for Pyrmont.

2.3.1 Strengths

- Bank Street Park's positioning at the water's edge offers an unparalleled natural connection, affording residents and visitors the opportunity to engage with waterfront views and recreational activities.
- The park benefits from convenient access to the ANZAC Bridge and forthcoming metro line, fostering connectivity with broader urban networks.
- Direct links to densely populated residential areas of the city seamlessly weave the park into the fabric of inner-city Sydney.
- Immediate adjacency to the evolving urban renewal initiatives of Blackwattle Bay and Bays West positions Bank Street Park as a vital component of the broader urban transformation.
- Direct access to the water body provides a conducive environment for recreational boating activities, enriching the park experience.
- The presence of an existing community utilising the site for water access underscores the park's intrinsic value as a communal resource.
- The historic buildings at the northern end of the site bring a layer of heritage significance, contributing to the park's sense of place.
- Embedded within the local community, Bank Street Park holds the potential to nurture community identity and a sense of belonging.

2.3.2 Weaknesses

- An imminent concern revolves around the potential impact of sea level rise on the park's long-term sustainability.
- Industrial activities have left a legacy of contaminated soil, necessitating careful remediation efforts for safe usage.
- Industrial Context: The industrial nature of existing foreshore activities presents a challenge in harmonizing the park's recreational aspirations with its surroundings.
- Situated within inner-city Sydney, the challenge lies in optimising open spaces within a densely urbanised environment.
- Proximity to urban centers could lead to potential noise and congestion concerns, requiring mitigation measures for a serene park environment.

2.3.3 Opportunities

- Enable connection to existing recycling water connections located along and across Bank Street, as well as on the Western Distributor. Further investigation is required (Mott MacDonald).
- The waterfront offers potential for habitat regeneration, creating improved natural spaces within an urban context.
- Protecting and revitalising existing ecosystems contributes to enhanced wildlife habitat, fostering biodiversity.
- Urban greening initiatives align with biophilia, enriching visitor experiences with nature and green spaces.
- Future connections through the Glebe Island Bridge can bolster active mobility links to Bays West.
- The ANZAC Bridge provides partial shade and shelter, enhancing visitor comfort.
- Access to water facilitates recreational possibilities and the potential for heat mitigation.
- Filling gaps in the cycling network aligns with sustainable mobility and connectivity.
- Opportunities exist to integrate local culture, extending the City of Sydney's cultural harborside walks and programs.
- Repurposing existing building aligns with sustainability and heritage preservation objectives.
- The park can evolve into a vibrant gathering space, fostering community interactions and events.
- Incorporating cultural elements resonates with local identity, elevating the park's value as a place of significance.

2.3.4 Constraints:

- Minimising negative impacts on adjacent residential communities such as gentrification is a crucial consideration.
- Preventing detrimental impacts on aquatic ecologies and habitats is a priority for sustainable development.
- Integrating historic buildings at the northern end
- The challenge of optimising available space while accommodating diverse recreational amenities.
- Striking a balance between spaces for relaxation and active pursuits is a design imperative.
- Ensuring environmentally responsible practices and mitigating impacts on the water body align with sustainability goals.

It is expected that the future development will need to account for a 1% AEP flood level in the 2100 Climate Horizon. This accounts for a 23% increase in rainfall intensity and sea level rise of 1.3m (upper end of the 95% confidence interval projections.

Figure 1.1 Aerial view of Bank Street Park in the context of Blackwattle Bay

2.4 Blackwattle Bay Environmental Sustainability Framework

This environmental sustainability framework provides the foundation for Infrastructure NSW and our development partners to deliver Blackwater Bay as a climate-aligned development underpinned by the objectives of Climate Leadership, Resilience and Health and allow for the innovation that will unlock value when delivering those aims.

Climate Aligned means Blackwattle Bay will be developed in a way that is consistent with the goals of the Paris Agreement, which seeks to limit global warming to well below 2 °C above pre-industrial levels and pursue efforts to limit it to 1.5 °C.

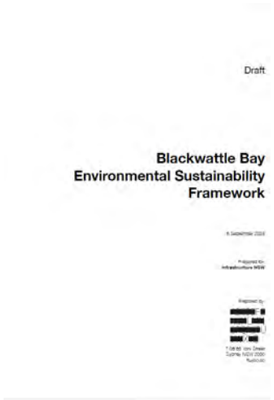
The Blackwattle Bay Environmental Sustainability Framework has been developed to guide and deliver leading environmental sustainability outcomes within the design and delivery of the pricing works.

The Bank Street Park Sustainability Strategy is aligned with INSW's environmental sustainability framework through the themes developed:

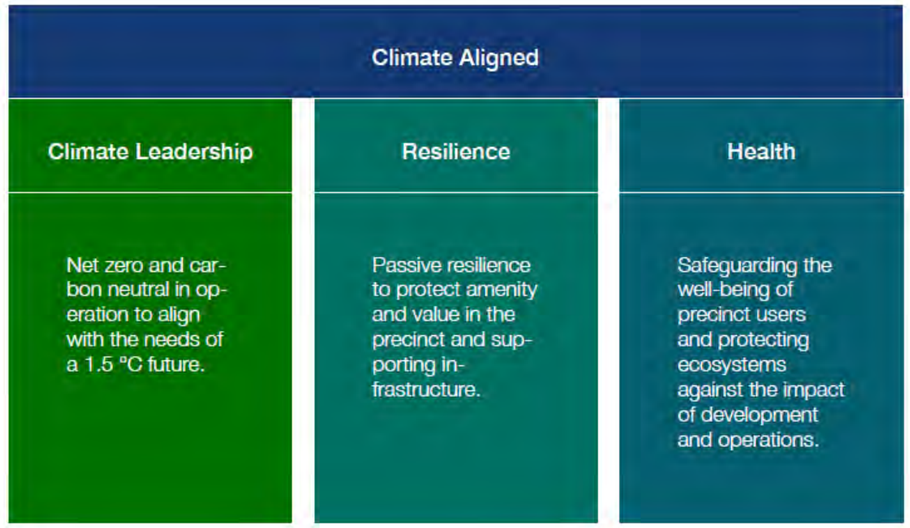
Climate Leadership
- Net Zero Carbon
- Resilient and Adaptable
- Biodiverse and Regenerative

Resilience
- Resilient and Adaptable
- Biodiverse and Regenerative
- Integrated Mobility

Health
- Integrated Mobility
- Healthy and Inclusive


Draft

Blackwattle Bay
Environmental Sustainability
Framework



2.5 Policy and planning framework

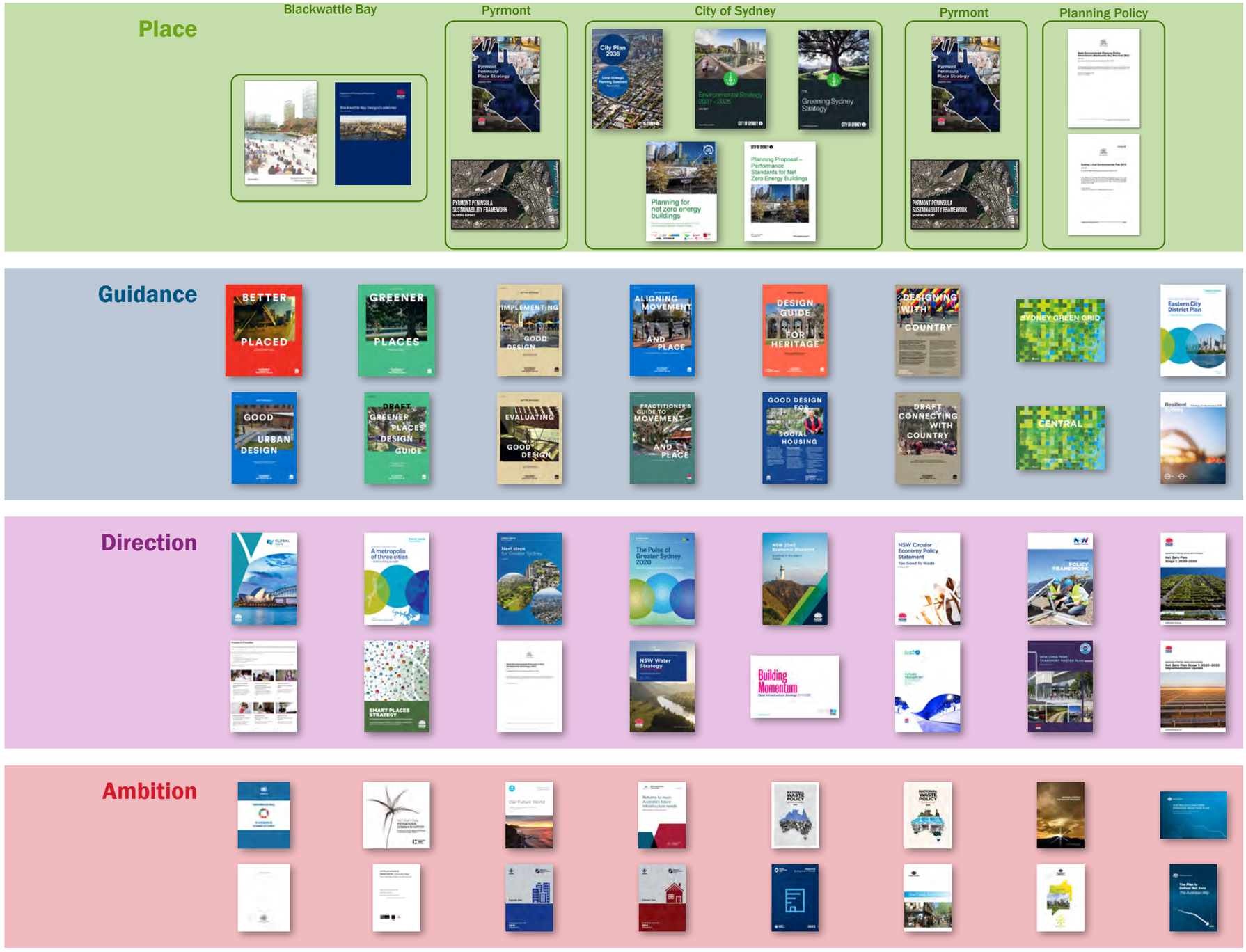
This section delves into the policy and planning framework that guides the development of Bank Street Park.

It examines a range of documents, spanning formal policies and strategic guidance, to navigate the intricate landscape of sustainability considerations within the context of Pyrmont, Blackwattle Bay, and the unique vision for Bank Street Park.
These documents have been organised in a hierarchy based on their relevance to Bank Street Park:

- Ambition | **What do we want?**
  Provide the global and national goals and aspirations for sustainability, sustainable development, and climate resilience.
- Direction | **How do we get there?**
  Provide state and region specific objectives and pathways for achieving ambitions.
- Guidance | **What does it look like?**
  Provide design specific approaches and support for the implementation of objectives in Sydney's built environment.
- Place | **What do we do in Pyrmont?**
  Provide Pyrmont specific strategies and actions for delivering a sustainable public park

The decision to review City of Sydney policies alongside the development of the Bank Street Park Sustainability Strategy is motivated by the park's strategic positioning within the City of Sydney local government area necessitates insight into the council's resident-oriented aspirations. This approach cultivates a "good neighbor" ethos, capitalising on the council's operational acumen and progressive sustainability insights.
This integration underscores collaborative engagement across government tiers, validating the commitment to shared environmental goals. The tangible cooperation within the development process enhances public confidence in actions alignment.
A detailed of review of the Place documents can be found in "Appendix A Policy and Planning Framework" on page 14. For each a short summary is provided, as well as potential implications or actions for realising them in the Bank Street Park.
A review of these documents shows key and consistent themes across this policy context include:

- zero carbon and renewable energy
- responsible and efficient consumption and production
- climate resilient and adapted
- biodiversity, ecosystem functioning, ecosystem services and human well-being
- integrated active transport
- flexible, efficient and resilient water cycle
- socially sustainable, inclusive and equitable communities
- good health and wellbeing
- connected with Country
- environmentally and socially responsible value chains



2.6 Development environment

In addition to policy and planning considerations, the project's development environment is significantly influenced by industry dynamics.

These objectives not only drive innovation but also offer specific built environment design initiatives for delivering key sustainability outcomes. A comprehensive review of industry-related documents is provided in "Appendix B Development Environment" on page 15, summarising each document's core points and offering potential implications or actionable steps for implementation at Bank Street Park.

2.6.1 Industry

Understanding industry-driven sustainability ambitions is crucial, as they propel innovation and progress toward sustainable development.
Key insights and implication from Industry Documents

- Social Sustainability and Inclusion:
  - Prioritise reconciliation, Indigenous inclusion, and community engagement as foundational elements of urban development.
  - Ensure cultural and community values are integrated into the design and operational strategies of urban spaces.
- Climate-Positive Urban Design:
  - Implement nature-based solutions to enhance ecological resilience and manage climate impacts.
  - Establish clear benchmarks for reducing embodied carbon in materials and construction processes.
  - Incorporate regenerative and circular economy principles to minimise environmental impact.

2.6.2 Rating tools

In the industry landscape, third-party sustainability rating tools serve as valuable assurance mechanisms.
Key insights and implication from Rating Tools Documents

- Sustainable Design and Construction:
  - Strive for high sustainability ratings in design and construction, focusing on fossil fuel-free, renewable-powered, and low-carbon material usage.
  - Design for resilience, sustainability, and inclusivity, ensuring long-term viability and adaptability to future challenges.
- Energy and Resource Efficiency:
  - Advance building and precinct scale energy generation and storage solutions.
  - Promote the integration of renewable energy sources and efficient energy management systems.
- Health and Well-being Focused Design:
  - Incorporate design elements that enhance occupant health and well-being, following established health-focused building standards.
  - Emphasise the creation of healthy, safe, and comfortable urban environments for all users.
- Carbon Neutrality and Climate Action:
  - Aim for carbon-neutral certifications, demonstrating a commitment to addressing climate change.
  - Implement strategies that align with national and international greenhouse gas reduction protocols, focusing on operational and upfront carbon emissions.

Industry

Property Council of Australia

AILA

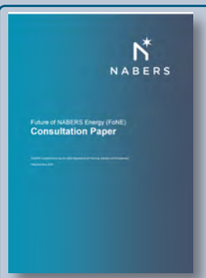
Committee for Sydney

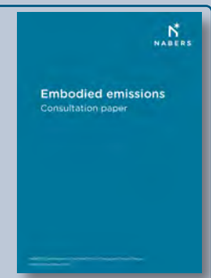
The Australian Sustainable Built Environment Council

Rating tools

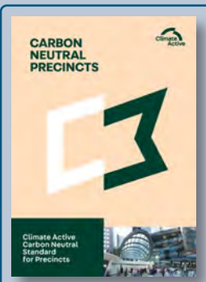
Green Star

NABERS





Climate Active



WELL

2.7 Urban research

Another lens in support of sustainability is the body of research in climate, ecology and sociology that affirms that human impacts on natural systems are approaching key tipping points, and that we face a rapidly escalating risk environment for societal stability in a changing world.

There are new research-based frameworks for viewing these sustainability trends through several distinct yet complementary lenses, all of which have shaped the approach to this framework. In the context of property and real estate investment, these trends amplify the prospect of long-term value realisation, underpinned by the resilience and desirability of sustainable and inclusive communities. Government investment, when channelled through the lens of these trends, emerges as a strategic vehicle for engendering holistic urban rejuvenation. Such integration transcends superficial aesthetics, culminating in a holistic and quantifiable elevation of the park's stature – both as a sustainable urban habitat and an attractive investment proposition.

Key Lessons and Actions

- Living within Carrying Capacity of the Planet:
  - Employ ecological footprint analysis to gauge the park's sustainability thresholds.
  - Devise growth strategies that harmonize with the park's ecological limits.
- Supporting Social and Economic Inclusion:
  - Integrate mixed-income housing to foster social diversity.
  - Design inclusive public spaces that promote social cohesion.
- Designing with Consideration for Natural Systems:
  - Leverage biophilic design principles to create a seamless integration with local ecosystems.
  - Develop stormwater management strategies based on the natural hydrological patterns.
- Actively Reversing Environmental Damage:
  - Implement regenerative landscaping practices to restore biodiversity.
  - Integrate renewable energy sources and sustainable building materials.
- Fostering Shared Prosperity:
  - Establish partnerships with local businesses to bolster economic growth for the community.
  - Incorporate shared workspace concepts to stimulate entrepreneurship and innovation.
- Advancing Local Growth with Holistic, Interconnected Strategies:
  - Integrate transportation planning to facilitate multimodal connectivity.
  - Develop a comprehensive waste management infrastructure to minimise environmental impact.

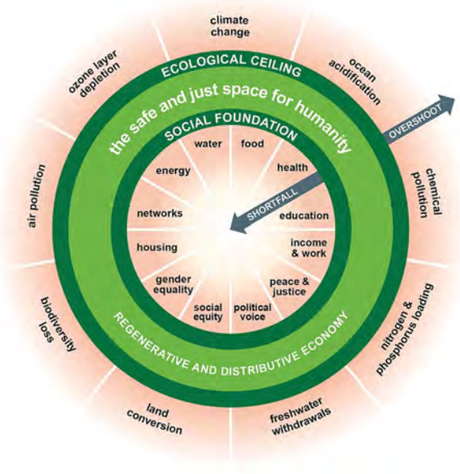


Figure 1.1 Doughnut economics visual framework for sustainable development (Source: Doughnut Economics Action Lab)

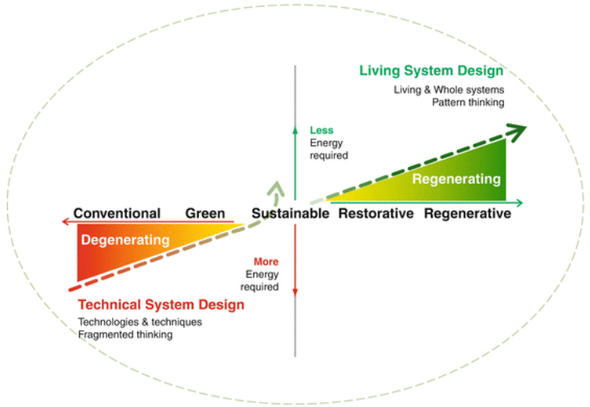


Figure 1.1 The spectrum of sustainability practices: From less bad to more good. (Source: Regenesis)

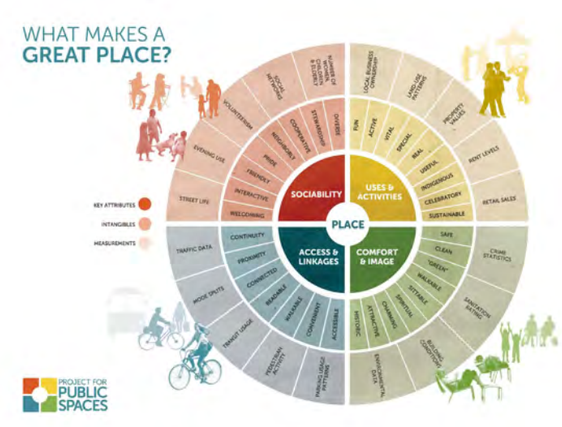


Figure 1.1 A framework to create connected, vibrant, and inclusive communities (Source: Project for Public Spaces)

2.7.1 Doughnut Economics

Developed by University of Oxford economist Kate Raworth, the Doughnut Economics framework for sustainable development, combines the concept of planetary boundaries with the complementary concept of social needs.

The framework regards the performance of an economy by the extent to which the needs of people are met without overshooting Earth's ecological ceiling. In this model, an economy is considered prosperous when all twelve social foundations are met without overshooting any of the nine ecological ceilings. This situation is represented by the area between the two rings, considered by its creator as the safe and just space for humanity.

Doughnut Economics is a model increasingly influencing sustainable urban development and valuable for Bank Street Park to utilise as it formalises the social needs of a community and provides a useful set of metrics to work towards.

2.7.2 Regenerative Development and Design

Regenerative Design, developed by Bill Reid and the Regenesis Institute for Regenerative Practice, is a design process that engages and focuses on the evolution of the whole of the system of which we are part.

Within a regenerative economy, the focus moves up from the purely mechanical activities of production and consumption to the developmental activity of wise management. This wise management seeks to grow not only wealth but the wealth-generating capacity of all participants, as well as growing the natural capital that underpins societal wealth.

Regenerative Development and Design is a model relevant for Bank Street Park because it provides a framework for development which moves beyond mitigating negative impacts and looks to actively rehabilitate; not just the environment, but also social and economic systems in a mutually beneficial way.

2.7.3 Transformative Placemaking

Transformative Placemaking, developed by the Brookings Institute and the Anne T. and Robert M. Bass Center for Transformative Placemaking, is an outcome-oriented framework that defines transformative placemaking as a new form of integrated development.

Transformative Placemaking expands the scope of development to include efforts aimed not only at improving our social, emotional, and physical wellbeing, but at remaking the relationship of place and economy in ways that generate widespread, and locally-led, prosperity.

The key aim is to nurture an economic ecosystem that is regionally connected, innovative, and rooted in the assets of its local residents and businesses.

Transformative Placemaking is a useful model for Bank Street Park because it has developments of a physical scale that can contribute meaningful outcomes to the community, as well as the appetite and ambition to support the area's sensitive and sustainable growth.

03 SUSTAINABILITY STRATEGY

3.1 Sustainability Framework

Informed by analysis of the significant contextual factors preceding it, this Sustainability Strategy serves as the distilled synthesis of recurring themes, key considerations, and essential insights.

Functioning as the foundational blueprint, this strategy not only lays the groundwork for integrating sustainability principles into the design of Bank Street Park itself but also provides a compass for guiding future detailed design stages and operational endeavors.

3.1.1 Sustainability Vision

Bank Street Park envisions a thriving and inclusive urban oasis that rejuvenates Blackwattle Bay's waterfront, harmoniously blending nature and community to create a resilient, vibrant, and sustainable haven for both people and wildlife.

3.1.2 Sustainability Principles

The sustainability ethos of Bank Street is structured around five core principles that underscore a commitment to meaningful and enduring sustainability:

- Net Zero Carbon | Bank Street Park will lead the way in adopting a comprehensive climate-positive approach that encompasses all stages of development, from design and construction to daily operations, setting a new environmental standard within its immediate precinct.
- Resilient and Adaptable | Bank Street Park seeks to lead in forward-looking development, ensuring resilience and adaptability to thrive amidst challenges while fostering a strong community fabric.
- Biodiverse and Regenerative | Forge a renewed connection with nature at Bank Street Park, remediating its industrial history to establish a haven for biodiversity and ecological renewal along Blackwattle Bay.
- Integrated Mobility | Bank Street Park envisions a seamlessly sustainable mobility ecosystem, empowering residents of Blackwattle Bay and Pyrmont with efficient, carbon-neutral transportation that harmonises with nature, enhancing daily life and urban resilience.
- Healthy and Inclusive | Bank Street Park will create a place that is welcoming to all people, regardless of their age, size, gender, culture, disability or ability, and enrich the health and wellness of visitors and the community.

3.1.3 Structure of the Sustainability Strategy

The forthcoming section delves into the individual Sustainability Principles, each of which will be explored in greater detail on the subsequent pages. The structure of these pages follows a comprehensive approach, encompassing:

- Vision Statement – Articulating the overarching aspiration that defines the principle's essence and significance.
- Objectives – Clear and achievable goals that guide actions and track progress toward desired outcomes.
- Benchmarks – Performance targets drawn from the context analysis.
- Planning Initiatives – Demonstrates how the Bank Street Park concept design actively delivers or enables the principle.
- Design Opportunities – Architectural and design possibilities, these directives guide future detailed design of individual facilities.
- Operational Opportunities – Pathways for operational excellence, both for INSW and private operators, these opportunities actively drive the realisation of the sustainability vision.

As we proceed through the upcoming pages, these components together outline a roadmap towards achieving a vibrant, sustainable, and thriving Bank Street Park, underscoring our steadfast commitment to a more promising future.

3.2 Net Zero Carbon

Bank Street Park will lead the way in adopting a comprehensive climate-positive approach that encompasses all stages of development, from design and construction to daily operations, setting a new environmental standard within its immediate precinct.

Rationale

Bank Street Park's commitment to a comprehensive Net Zero Carbon approach is firmly grounded in the imperative of a net zero carbon future, as underscored by sustainability strategies and policies across all levels of government. Embracing a net zero carbon present not only aligns with evolving industry norms but positions the park as a beacon of forward-thinking innovation.

Objectives

- To minimise life-cycle carbon impact of materials used in construction.
- To incorporate energy-efficient design strategies for park buildings and infrastructure.
- To support carbon-neutral transportation options and promote sustainable mobility.
- To enhance carbon balance by integrating landscapes that actively sequester carbon.
- To harness renewable energy sources for surplus energy generation.
- To achieve net zero energy consumption across park operations.
- To offset carbon emissions to establish a net-zero precinct

Benchmarks

- Deliver a net-zero carbon precinct by 2041 (Blackwattle Bay Design Guidelines)
- Irrigation is 100% recycled water in public open spaces (BBDG)
- Contribute to Blackwattle Bay 5 star Green Star Communities rating (BBDG)
- 100% of precinct powered by renewable energy (BBDG)
- Minimum of 80% construction, demolition and operational waste diverted from landfill (BBDG)
- Facilitate connection to future precinct-scale energy and water utilities.
- Net zero emissions from organic waste by 2030 (Net Zero Plan Stage 1: 2020-2030).
- 20% reduction in embodied carbon by 2030 (Green Star)

Planning Initiatives

- Integrate solar panels on rooftop of the community building to capture solar energy.
- Design landscapes with a mix of native trees, shrubs, and vegetation that have high carbon sequestration potential.
- Incorporate planting strategies that encourage healthy soil ecosystems, enhancing carbon storage in the ground.
- Integrate green infrastructure elements, such as rain gardens and bioswales, that help absorb and store carbon.
- All-electric built environment.
- Prioritise low embodied carbon materials.
- Design waste collection and recycling stations strategically throughout the park.
- Build distribution networks for water supply and discharge streams.

Design Initiatives

- Reuse brickwork from existing buildings
  - Seating and planting in existing building 'ruins' (Oculus)
  - Reuse of existing building brickwork for paving
- Prioritise timber and other plant-based building materials that sequester carbon in their growth.
- Choose low embodied carbon materials and products for major building systems (structure, cladding, foundations, etc.).
  - Recycled sustainable sandstone seating wall
- Minimise operational energy through climate responsive design.
- Construct buildings to exploit use of thermal mass to regulate internal temperature.
- Optimise all façades to shade glazing to reduce cooling energy use yet provide high quality daylighting.
- Maximise the free cooling provided by outdoor air through design for cross ventilation, and night purging.
- Green roof with solar panels reduces heat transfer to the building
- Implement individual building metering to monitor and manage energy consumption.
- Adopt the use of energy-efficient mechanical systems, specifically focusing on the integration of high-efficiency heat pumps for heating, cooling, and hot water needs.
- Partially submerge dragon boat storage building into the earth, leveraging the natural insulative properties of the ground to significantly improve thermal efficiency, reducing reliance on artificial heating and cooling systems, and contribute to energy savings.
- Integrate high performance facades eliminate thermal bridging, condensation, and water penetration

Operational Initiatives

- Implement a clear waste separation system with educational signage to encourage proper waste disposal.
- Reduce lighting energy and overlighting through energy efficient LED lighting and monitoring/smart lighting systems
- Use of recycled materials and products with recycled content through built environment construction.
- Purchase renewable energy for future operations overtime
- In future offset emissions from construction and operation with nature based solutions.
- Consider building's end-of-life and demolition, where materials can be recycled
- Ensure the continous monitoring of energy and electricity consumption and adaptability for reduced consumption

Supports

- UN Sustainable Development Goalss
  - SDG 9 Industry, Innovation and Infrastructure
  - SDG 11 Sustainable Cities and Communities
  - SDG 13 Climate Action
- Sustainable Buildings SEPP 2022
- Sydney LEP 2012
- NSW Climate Change Policy Framework
- Pyrmont Precinct Place Strategy
- Blackwattle Bay Design Guidelines

Figure 3.1 Net Zero Carbon spatial initiatives at Bank Street Park

3.3 Resilient and Adaptable

Bank Street Park seeks to lead in forward-looking development, ensuring resilience and adaptability to thrive amidst challenges while fostering a strong community fabric.

Rationale

Adapting to the direct effects of climate change on the environment and our settlements, as well as the indirect effects on society and the economy is critical to creating communities that will thrive long into the future, and will have greater capacity to support neighbouring communities and contribute to the resilience of the region as a whole.

Objectives

- To withstand and recover from short-term shocks like extreme weather and utility failures, ensuring ongoing park functionality.
- To enable long-term adaptability to climate change impacts and rising energy costs, ensuring sustained relevance.
- To flexibly respond to changing market conditions and evolving environmental expectations, maintaining enduring value.
- To swiftly recover and restore functionality in the face of disruptions, enhancing resilience.
- To integrate versatile elements accommodating various uses and evolving community needs, ensuring adaptability..

Benchmarks

- Deliver a net-zero carbon precinct by 2041 (Blackwattle Bay Design Guidelines).
- Light reflectivity from building materials used on facades is not to exceed 20% (Blackwattle Bay Design Guidelines).
- No net loss in flood storage or floodway area because of the development (Blackwattle Bay Design Guidelines).
- All floor levels are to be at or above the Flood Planning Level identified in an adopted flood study and/or floodplain risk management plan (Blackwattle Bay Design Guidelines).
- No increase in off site flooding due to the development (Blackwattle Bay Design Guidelines).
- A reduction in post-development baseline (i.e. proposed development without any water quality treatment) annual pollutant loads of (Blackwattle Bay Design Guidelines).:
  - Gross Pollutants (GP) (litter and vegetation >5 mm) 90%
  - Total Suspended Solids (TSS) 85%
  - Total Phosphorus (TP) 65%,and
  - Total Nitrogen (TN) 45%.
- Public open space is to be irrigated with recycled water (Blackwattle Bay Design Guidelines).
- A minimum canopy cover of 60% to streets, 45% to the foreshore promenade and 30% to parks and 30% to private property is to be achieved (Blackwattle Bay Design Guidelines).

Planning Initiatives

- Mitigate flood risks through implementing (Enspire Stormwater Management Report):
  - Grading for management of overland flow
  - Flood Planning Levels that respond to anticipated climate change risks
  - Areas that require additional capacity of stormwater drainage through pit and pipe system capacity and provision for overland flow
- Incorporate water sensitive urban design (Enspire Stormwater Management Report):
  - Filter baskets within surface inlet stormwater pits for sediment collection.
  - Bioretention tree pits for water quality improvement
    - Trees within the promenade will include stratacell with filter media.
  - Vegetated swales for water quality improvement.
  - Proprietary storm filters for water quality improvement.
- Enable connection to exiting or future recycled water network identified in Mott MacDonald's Bank St Park Infrastructure Delivery, Management & Staging Plan Report
- Surface runoff from roads, roofs and other hardscapes filtered through landscape treatment before discharging to waterways.
- Extensively vegetated public realm to mitigate urban heat island effects and protect against increasing peak temperatures.
- Locate above probable maximum flood (PMF) levels all critical equipment and services (electrical equipment and switch gear
- Integrate community facilities that can serve as gathering places during emergencies and interruptions in services.
- Prioritise materials with low thermal mass or high solar reflectance index (SRI) to reduce urban heat island (UHI) effects.

Design Initiatives

- Use recycled water from recycled water network for non-potable uses (e.g. toilet flushing, landscape irrigation, dragon boat cleaning)
- Utilise a climate responsive design approach, optimise building envelope for passive climate control.
- Provide areas of operable facade to allow fresh air during power outages
- Green roofs designed to reduce peak rainwater runoff.
- Installing water saving fixtures and appliances can provide significant water use savings

Operational Initiatives

- Facilitate and enable ongoing community programming (e.g. markets, events, etc.) to foster community cohesion and robustness.
- Develop Climate Adaptation and Community Resilience plans.
- Continous monitoring of resilient strategies and adaptation for improvement
- Engage with emergency services to create specific plans of response to emergencies
- Integrate spatial redundancy in mechanical systems and utilities to ensure continued functionality in case of partial system failures.

Supports

- UN SDGs
  - SDG 9 Industry, Innovation and Infrastructure
  - SDG 11 Sustainable Cities and Communities
  - SDG 13 Climate Action
- A City for All Community Safety Action Plan
- Blackwattle Bay Climate Change Adaptation Report, AECOM
- Blackwattle Bay Design Guidelines
- Sydney LEP 2012
- Sustainable Buildings SEPP 2022

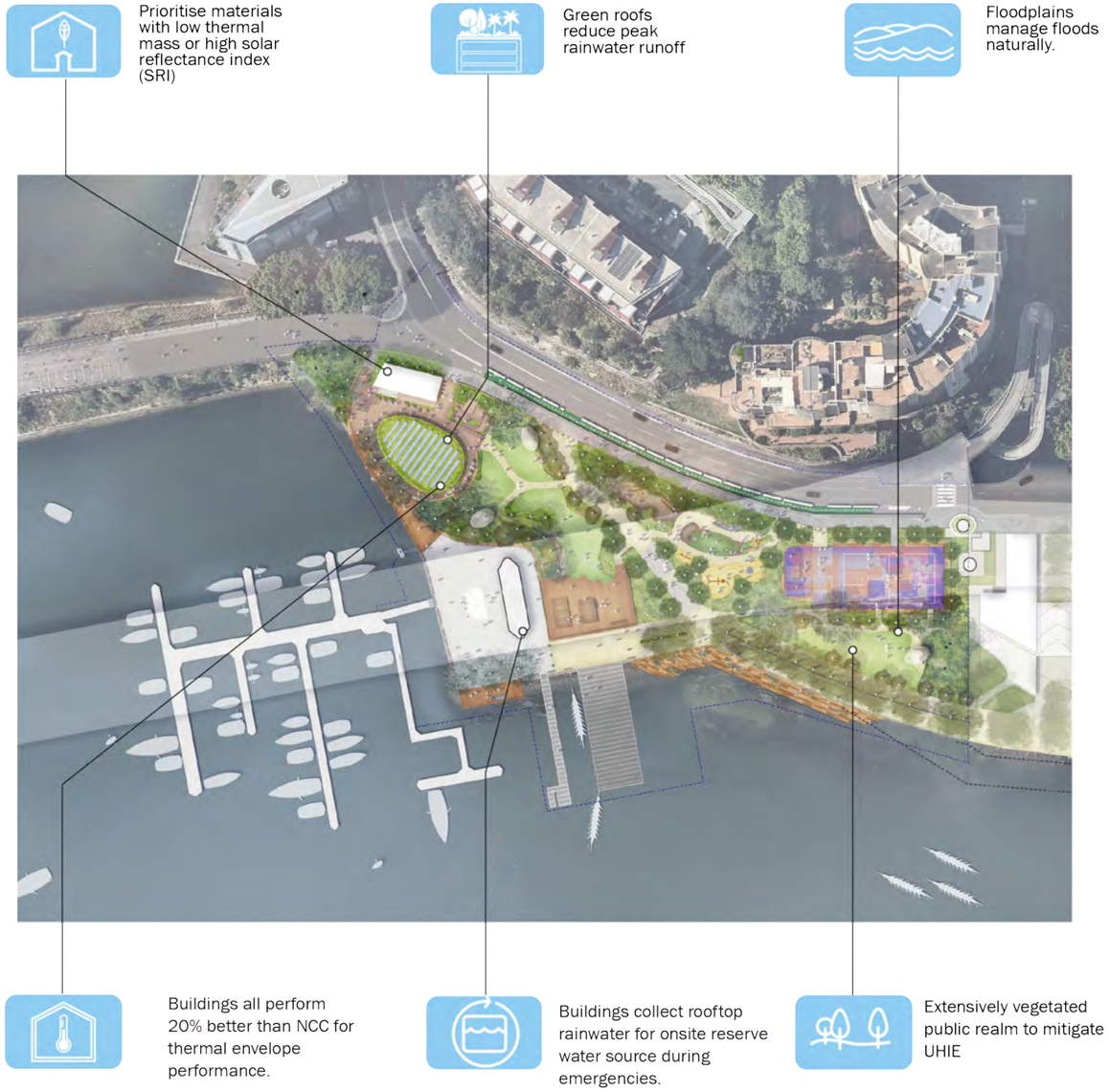


Figure 1.1 Resilient and Adaptable spatial initiatives at Bank Street Park

3.4 Biodiverse

Forge a renewed connection with nature at Bank Street Park, remediating its industrial history to establish a haven for biodiversity and ecological renewal along Blackwattle Bay.

Rationale

Creating a biodiverse and regenerative park on this contaminated post-industrial waterfront site will rejuvenate the environment, enhance community well-being, and contribute to a sustainable and resilient urban landscape, mitigating past industrial impact, providing green space, improving air quality, and setting a positive precedent for future development.

Objectives

- To ensure the preservation and protection of existing natural ecosystems, safeguarding the ecological balance.
- To cultivate a biophilic environment that immerses the community in nature, fostering well-being, physical engagement, and social unity.
- To amplify the canopy cover of mature trees and vegetation in public spaces, promoting ecological diversity and habitat growth.
- To prioritise the integration of nature-based solutions that promote coexistence between the environment and the community.
- To eliminate pollutants from wastewater and stormwater discharge, safeguarding the purity of waterways.
- To design networks and spaces that facilitate the movement of local fauna, creating interconnected habitats that flourish.

Benchmarks

- Minimum Canopy Cover (Blackwattle Bay Design Guidelines):
  - 60% to streets
  - 45% to foreshore promenade
  - 30% to parks
- Create a net increase in biodiverse vegetation and useful habitat over existing development (Green Building Council of Australia).
- Maintain and introduce habitat (Biodiversity Sensitive Urban Design, RMIT).
- Improve potential for positive human–nature interactions (Biodiversity Sensitive Urban Design, RMIT).
- Mitigate light and noise pollution impacts on nature (Biodiversity Sensitive Urban Design, RMIT).

Planning Initiatives

- Protect existing significant trees
- The park achieves 30% minimum tree canopy cover, with an anticipated 40% canopy coverage at maturity (Oculus).
- According to City of Sydney Assessment the site achieves 47% canopy cover, which excludes hard courts and buildings (Oculus).
- Create an interconnected network of open space.
- Balance between plant species:
  - Predominantly endemic plant species which improve chances of attracting local birds and insects to help with the local ecosystem, such as PCT 3594.
  - Implement weed management plan
  - Locally-sensitive plant species which require little irrigation and maintenance and easily adapt to site conditions e.g. salt tolerant and high winds
- Provide educational signage for protecting natural habitats including aquatic vegetation for migratory birds and fish
- Restrict site lighting to reduce light pollution and implement low mounted and shielded lighting
- Endemic planting that represents Country such as garden beds throughout the park
- Construct habitats for locally indigenous terrestrial, aquatic and flying species.
  - Promote habitat of macroalgae by minimising shading and reclamation. Additional habitat elements should be installed such as increasing rocky rubble, seahorse hotels and other fish habitat installations (eco logical)
  - Provide migratory shorebird habitat particularly for the Bar-tailed Godwit and Curlew Sandpiper (eco logical)

Design Initiatives

- Promoting aquatic habitat through 'living seawalls' that use oysters and kelp to create habitat for aquatic ecosystems
- Green roofs where not used for solar PV
- Design spaces that foster interaction and stewardship, community identity, sense of connectedness and community capacity.
- Use the value of public art by integrating public art into green projects.

Operational Initiatives

- Implement a sediment and erosion control plan during construction and implement sediment barriers
- Improve equity of access to green infrastructure by considering the needs, values, motivations, uses, and barriers to engagement with various cultures and user groups.
- Offsite biodiversity initiatives that mitigate the immediate impact of the program on site.
- Support ongoing monitoring and stewardship programs.

Supports

- UN SDGs
  - SDG 3 Good Health and Well-being
  - SDG 11 Sustainable Cities and Communities
  - SDG 13 Climate Action
  - SDG 15 Life on Land
- NSW Premier's Priorities
- Greater Sydney Region Plan, Greater Sydney Commission
- The Six Cities Region Discussion paper, Greater Cities Commission
- Greener Places, GANSW
- Pyrmont Peninsula Place Strategy, NSW Government
- Blackwattle Bay Design Guidelines
- Sydney LEP 2012
- Sustainable Buildings SEPP 2022

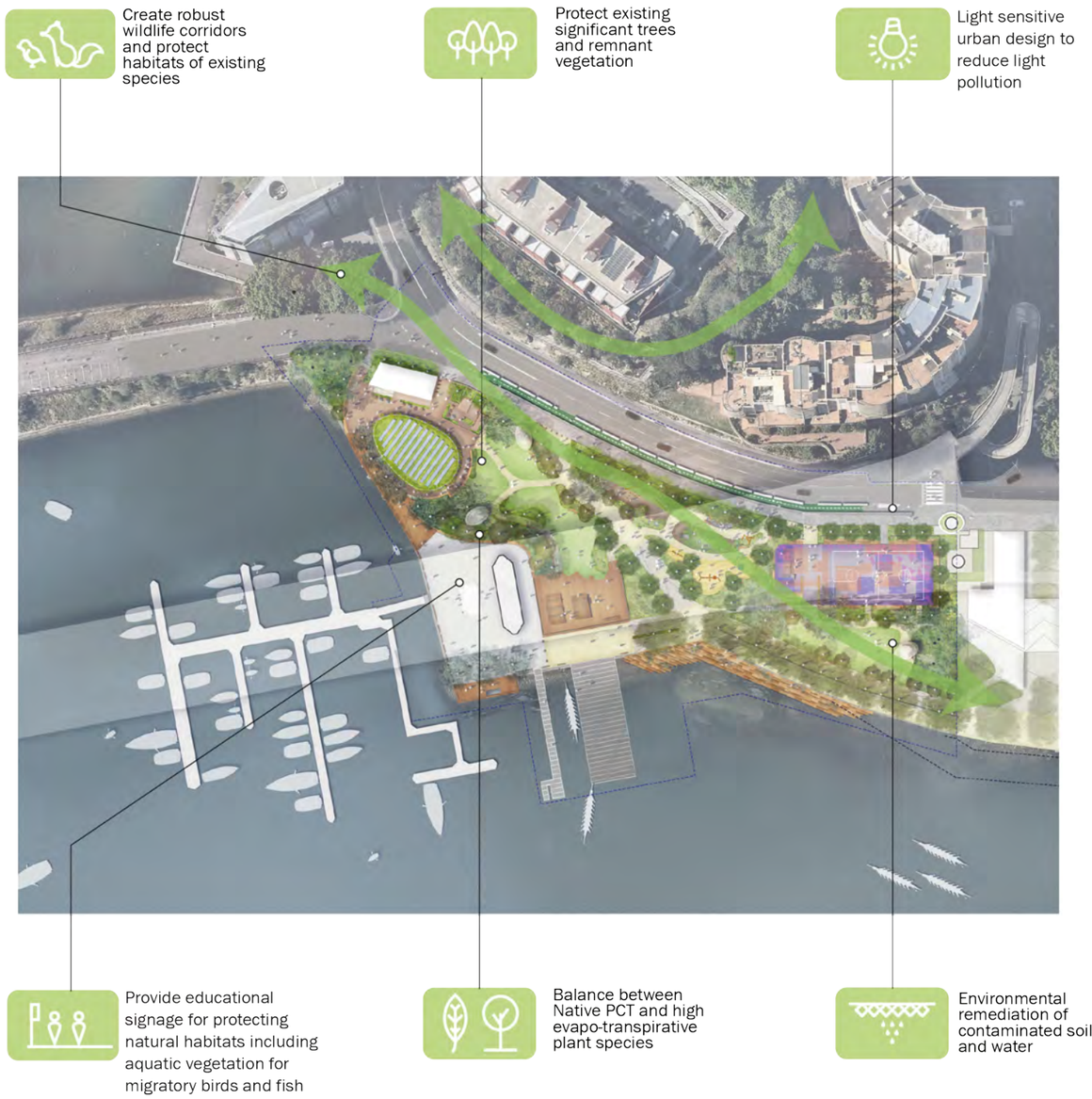


Figure 1.1 Biodiverse spatial initiatives at Bank Street Park

3.5 Integrated Mobility

Bank Street Park envisions a seamlessly sustainable mobility ecosystem, empowering residents with efficient, carbon-neutral transportation that harmonises with nature, enhancing daily life and urban resilience.

Rationale

Integrated mobility directly impacts community well-being by providing accessible and sustainable transportation options, fostering physical and mental health, curbs emissions and air pollution contributing to global climate goals, ensures adaptability to disruptions, while boosting economic prosperity by facilitating efficient access to workplaces and markets. It underscores social equity by ensuring mobility access for all, regardless of status or ability, promotes tourism, recreation, and local identity by attracting visitors and fostering a sense of place.

Objectives

- To incorporate pathways, lanes, and facilities that prioritise pedestrian and cyclist safety, promoting active transportation and reducing reliance on motor vehicles for short trips.
- To create well-defined connections between the park and existing or planned public transit routes, making it convenient for users to transition between different modes of transportation.
- To ensure that all mobility infrastructure is universally accessible, catering to individuals of varying abilities and ages, and promoting equitable use of the park.
- To integrate lush greenery, shade, and rest areas along pathways, enhancing the aesthetic appeal of the park while providing comfortable routes for walking and cycling.
- To incorporate designated areas within the park for bike-sharing stations and other micro-mobility options to encourage sustainable transportation choices.

Benchmarks

- Minimum 10 metre wide foreshore promenade (Blackwattle Bay Design Guidelines)
- Deliver bicycle infrastructure that accommodates and separates recreational and commuter users (Blackwattle Bay Design Guidelines)
- Public bicycle parking facilities are to be provided in the public domain with convenient access to commuter and recreational cycleways in the Precinct (Blackwattle Bay Design Guidelines).
- A safe path of travel from bike parking areas to entry/exit points is to be marked (Blackwattle Bay Design Guidelines).
- Development is to be designed to facilitate easy, efficient and safe connectivity to existing and proposed public transport (Blackwattle Bay Design Guidelines).
- Minimised provision of parking for all land uses is encouraged (Blackwattle Bay Design Guidelines).

Planning Initiatives

- Fully separated pedestrian and bicycle pathways on Bank Street
  - Future cycleways to connect to Anzac Bridge and Glebe Island Bridge cycleways
  - 30 bicycle parking spaces provided in spaces of passive surveillance
  - 2.6m bi-directional cycleway with buffer zones
  - Implement vegetation on buffer zones to promote biophillia and biodiversity
  - Plant trees along pathways and cycleways to provide shade and thermal comfort for people
  - Public through site links to the foreshore from Bank Street
- Enhanced pedestrian connections:
  - Pedestrian linkages to existing and future public transport services (bus stops at Miller Street, Fish Market light rail stop and future metro stations)
  - Raised zebra crossing on Bank Street
  - Primary BSP pathway (6m wide) facilitates desire line to waterfront
  - Provisions for future connection to Glebe Island Bridge
  - 3m width for Bank Street footpaths
  - Use materials e.g. light coloured and shading, for pathways that provide cooling for users
- Bicycle parking located in public space with good passive surveillance and close to cycleways
- Public and active transport links are the main transport nodes.

Design Initiatives

- Various signage types to enforce sense of place and legible wayfinding, including: legible, interpretive, multilingual operational and bespoke

Operational Initiatives

- Consider Mobility-as-a-Service (MaaS) such as bicycle sharing (e.g. Lime) and share scooters

Supports

- UN SDGs
  - SDG 3 Good Health and Well-being
  - SDG 11 Sustainable Cities and Communities
  - SDG 13 Climate Action
- Commonwealth Government, Smart Cities Plan.
- Future Transport Strategy 2056
- The Six Cities Region, Greater Cities Commission.
- Aligning Movement and Place, GANSW
- Pyrmont Peninsula Place Strategy, NSW Government
- Blackwattle Bay Design Guidelines
- Sydney LEP 2012
- Sustainable Buildings SEPP 2022

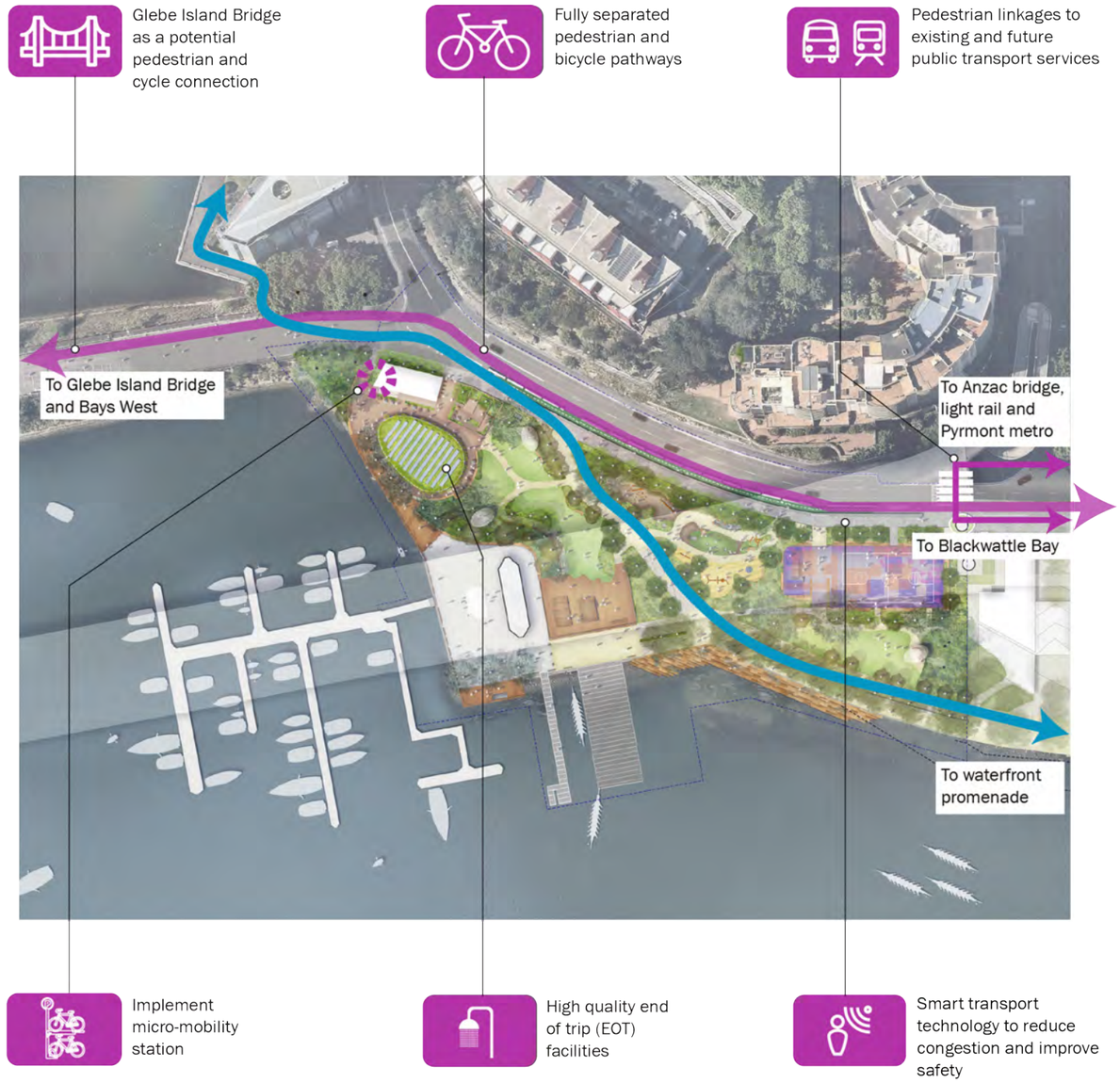


Figure 1.1 Integrated mobility spatial initiatives at Bank Street Park

3.6 Healthy and Inclusive

Bank Street Park will create a place that is welcoming to all people, regardless of their age, size, gender, culture, disability or ability, and enrich the health and wellness of visitors and the community.

Rationale

Prioritising human health and wellbeing, inclusion, mobility options, access to resources, affordability, and participation in leadership and governance creates successful places that improve liveability and resilience, achieve higher commercial value and faster sales, encourage further good design in an area, and demonstrate a commitment to corporate social sustainability.

Objectives

- To foster social cohesion by creating a vibrant social environment that reflects community history and identity.
- To embrace nature and biophilia by enhancing green spaces, connecting people to nature for mental and physical health.
- To ensure inclusivity by designing accessible environments that welcome everyone regardless of background or ability.
- To promote social interaction by establishing spaces that encourage socialising and community engagement.
- To support mental well-being by incorporating natural elements to enhance mental wellness and provide relaxation areas.
- To ensure safety and security by implementing effective lighting and surveillance for a safe environment.

Benchmarks

- Provide high quality, integrated, permeable and multifunctional public spaces that cater for movement, recreation and social interaction
- Achieve an adaptable public domain capable of accommodating a broad range of uses and events (including major events), experiences and activities.
- Ensure that public art is an integrated and cohesive part of Blackwattle Bay.
- Promote the visibility of local Aboriginal and Torres Strait Islander community through public art.
- Facilitate co-ordination between the City of Sydney's Eora Journey Harbour Walk and major public art commissions in the Precinct.
- Promote sustainability through public art in new development.
- Recognise former uses through interpretive public art.

Planning Initiatives

- Community building with cafe in close proximity to recreational facilities and dragon boat/water sport facilities
- Fitness facilities within the park
  - Outdoor fitness equipment
  - Multi-purpose court
  - Water sports rental e.g. kayak
- Waterfront promenade encourages physical activity and active mobility
- Places for rest including landscape seating wall, rammed earth seatings, shaded structures and bench seats
- Install smart lighting in public spaces that is remote controllable and event configurable and is sensitive to light pollution
- Integrate diverse physical social infrastructure facilities
- Nature-based inclusive playspace for ages 2-12
- Views to the water from the park
- Passive surveillance within the park
- Shade shelter with outdoor dining
- Accessible drinking water fountains, with water bottle filling in 800 m radius throughout the precinct

Design Initiatives

- Artwork integrated in the public realm to create vibrance and reflection on culture and history
- Attract visitors through art installations, aspiring for highest artistic excellence
- Include diverse practitioners and prioritise Aboriginal artists
  - Large scale art canvas on the multi purpose court
  - Blak Diggers revealing history and truth telling:
    - facade treatment
    - shelter integration
    - ground plane integration
    - lighting integration
    - embedding language on site
- Revealing story of Eora Fisherwomen:
  - Landscape structure e.g. shelter
  - Paving of dragonboat storage
  - Viewing platform timber decking
- Acknowledgement of Bank Street Park's history including Aboriginal, colonial and migrant history
  - etched interpretive wording
  - Remnant heritage foundations/buildings
- Celebrate place based stories
- Celebrate natural materials through biophilic design.
- Support mobile working with frequent interior and exterior GPOs, charge stations, and a variety of spaces for individual and collaborative working - "I" and "we" spaces.

Operational Initiatives

- Hold events to keep the park activated and for inclusivity of different user groups
- All built environment enables basic materials, operations and maintenance are free from hazardous chemicals.
- Eliminate pesticide use from landscape maintenance.

Supports

- UN SDGs
  - SDG 3 Good Health and Well-being
  - SDG 11 Sustainable Cities and Communities
  - SDG 13 Climate Action
- The Six Cities Region, Greater Cities Commission.
- Blackwattle Bay Design Guidelines
- Sydney LEP 2012
- Sustainable Buildings SEPP 2022

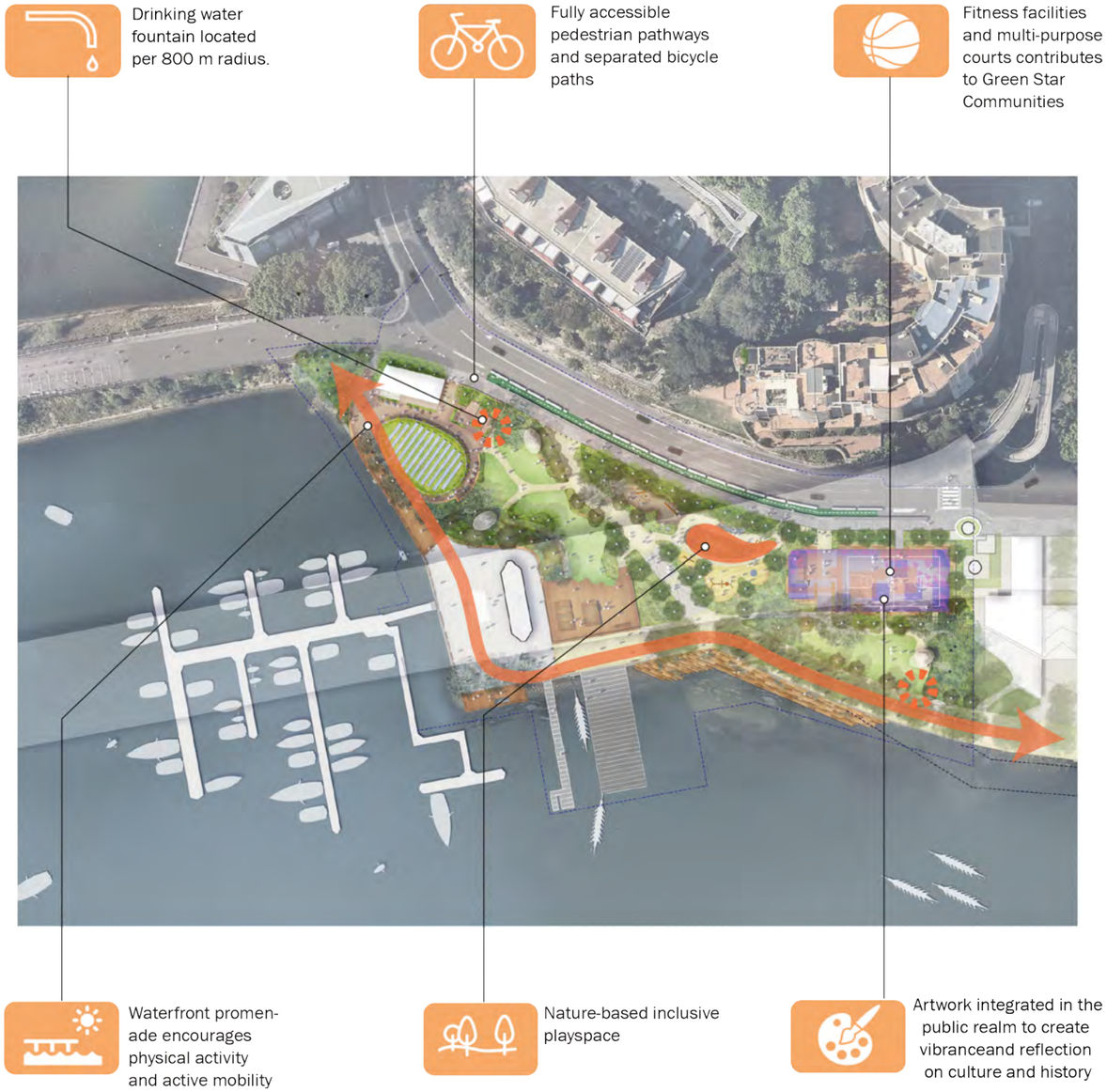


Figure 1.1 Healthy and inclusive spatial initiatives at Bank Street Park

3.7 Renewable Energy Generation

The calculations in Table 3.1 provide the Annual energy Generated in kw hours per year for flat mounted solar PV system and tilt mounted solar PV system for the community building at Bank Street Park.

The results indicate that the tilt mounted solar PV system is more efficient than a flat mounted solar PV system as it generates 7,640 annual kW per hour additional energy.

Through a conservative approach to the PV annual demand generation, the total amount needed annually for Bank Street Park is 284,232 kw hours per year. The proposed amount of solar will generate approximately a third amount of energy required for Bank Street Park.

Therefore other solutions are required to source renewable energy such as adding additional solar panels to Building D, sourcing energy from other renewable sources in the precinct, having a battery and investing in carbon offsets.

PV Annual Generation Assumptions:

- This data was generated using the PV Watts calculator tool
- This study assumes the use of Premium panels that have a 21% efficiency rate, producing 1 kW of energy per 4.76 m^2.
- Roof area was used from the latest Oculus landscape report floor plan data, using 80% of this area to account for other systems located on the roof

PV Annual Demand Assumptions:

- The data calculated is from a conservative approach, with the potential for decreased annual demand
- Data for the demand per unit was sourced from Mott MacDonald Bank St Park Infrastructure delivery, management & staging plan report
- Building Assumptions:
  - Building D and amenities are in use 7 days to the public
  - Landscaping lighting is on for 12 hours of the day (during the evening)
  - Dragon Boat Building including dragon boat storage and marina store is in use 7 days of the week
  - The kiosk is in use 7 days of the week
  - The community building is in use 1 day of the weekend per week
  - The marina office is in use from Monday-Friday
- Occupancy schedules were sourced from Section J of the NCC to calculate annual demand of energy

	Flat Mounted	Tilt Mounted (20 degrees)
Annual Generation (kW hr/kW year)	1, 241	1,347
Annual Generation (kWh/m2 year)	260.61	282.87
Annual Generation for total roof area (kw hr/year)	**89,441**	**97,081**

Table 3.1 Annual Generation (kW hours per year) of energy for community centre building at Bank Street Park

	Building D and Main Building Amenities	Landscaping	Dragon Boat Store Building and Main Building Marina Store	Kiosk	Community Space	Marina Office
Annual Demand (kw hr/year)	11,150	217,971	15,621	23,339	6,171	9,978
Total Annual Demand (kw hr/year)	**284,232**					

Table 3.2 Annual Demand (kW hours per year) of energy required for Bank Street Park

Appendices

Appendix A Policy and Planning Framework

1.A.1 State Environmental Planning Policy (Sustainable Buildings) 2022 & Local Environmental Policy 2012, Amendment (Blackwattle Bay Precinct)

The SEPP and LEP are planning policies that have to be implemented at Bank Street Park.

Sustainability standards for non-residential development come into effect from 1 October 2023.

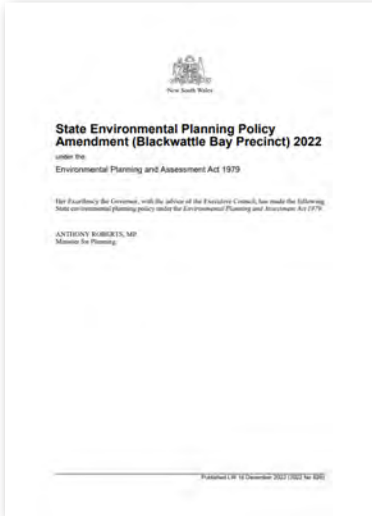
SEPP implications for Bank Street Park:

- This SEPP affects all new non-residential development with a capital investment value of $5 million. The new buildings at Bank Street Park are included within this.
- Developments that meet the SEPP criteria (not Bank Street buildings currently) should be designed to enable:
  - the minimisation of waste from associated demolition and construction, including by the choice and reuse of building materials,
  - reduction in peak demand for electricity, including through the use of energy efficient technology,
  - reduction in the reliance on artificial lighting and mechanical heating and cooling through passive design,
  - the generation and storage of energy,
  - the metering and monitoring of energy consumption,
  - the minimisation of the consumption of potable water.

Sydney Local Environmental Policy 2012

The SEPP and LEP both contain the following implications for Bank Street Park:

- Deliver a world class foreshore walk that is in the public domain
- Public site links from Bank Street through to the foreshore
- Public foreshore promenade should have a minimum width of 10m that is clear of buildings and other permanent structures
- For erection of buildings:
  - Development is consistent with the Blackwattle Bay Design Guidelines
  - Public utility infrastructure i.e. water, electricity supply, sewage disposal/management, essential for the development is available, or adequate arrangements have been made to make the infrastructure available when it is required
  - New buildings must not exceed GFA stated in 6.68 (2) of the LEP
  - (d) appropriate measures will be taken to ensure the building is capable of achieving—
  - (i) a Green Star building rating with a “credit achievement” in Credit
  - 22: Energy Use, or
  - (ii) a standard the consent authority is satisfied is equivalent to the standard specified in subparagraph (i), and
  - (e) public utility infrastructure essential for the development is available, or
  - adequate arrangements have been made to make the infrastructure
  - available when it is required, and
  - Glebe Foreshore Parks 21 June 9am–3pm


New South Wales

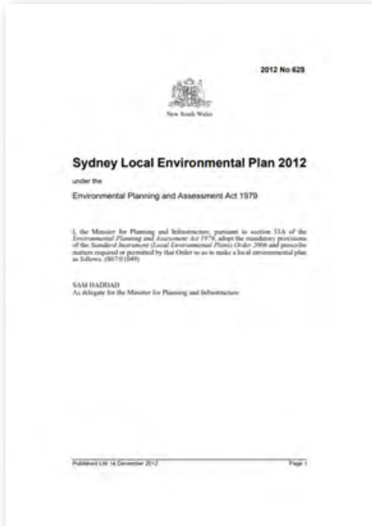
State Environmental Planning Policy Amendment (Blackwattle Bay Precinct) 2022

under the

Environmental Planning and Assessment Act 1979

Her Excellency the Governor, with the advice of the Executive Council, has made the following State environmental planning policy under the Environmental Planning and Assessment Act 1979.

ANTHONY ROBERTS, MP
Minister for Planning


2012 No 628

New South Wales

Sydney Local Environmental Plan 2012

under the

Environmental Planning and Assessment Act 1979

I, the Minister for Planning and Infrastructure, pursuant to section 33A of the *Environmental Planning and Assessment Act 1979*, adopt the mandatory provisions of the *Standard Instrument (Local Environmental Plans) Order 2006* and prescribe matters required or permitted by that Order so as to make a local environmental plan as follows. (S07/01049)

SAM HADDAD
As delegate for the Minister for Planning and Infrastructure

Published LW 14 December 2012 Page 1

1.A.2 Blackwattle Bay Design Guidelines

The Design Guidelines set out specific guidelines to inform future development within the Precinct. It comprises of a hierarchy of objectives and provisions to guide development.

The purpose of this Design Code is to provide detailed provisions for the redevelopment of Blackwattle Bay.
Sustainability Principles:
Principle 4: Pursue leading edge sustainability outcomes including climate change resilience, improved water quality and restoration of natural ecosystems.
Principle 5: Deliver development that is economically, socially, culturally and environmentally viable.
Relevant Objectives:

- Provide high quality, integrated, permeable and multifunctional public spaces that cater for movement, recreation and social interaction.

Community and cultural:

- Community centre space of a minimum of 400 square metres (GFA) in a location that enables its use as a boat house/club house

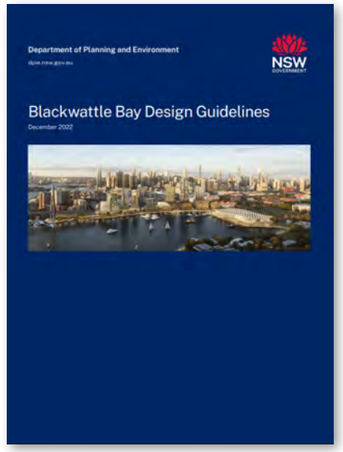
Environmental Management and Sustainability:

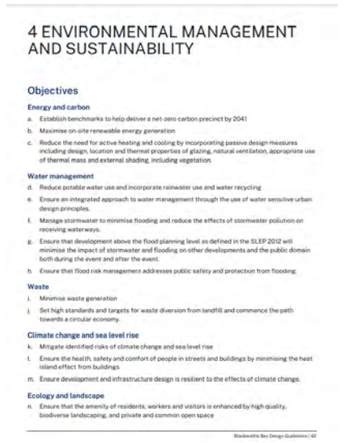
- Establish benchmarks to help deliver a net-zero carbon precinct by 2041
- Set high standards and targets for waste diversion from landfill and commence the path towards a circular economy.
- Green roofs provide aesthetic quality, cool air temperature and bird habitat
- Contribute to goal of 5 star Green Star Communities rating
- 100% of precinct powered by renewable energy
- 100% of irrigation is recycled water in public spaces
- Minimum of 80% contruction, demolition and operational waste diverted from landfill

Implications for Bank Street Park

- Foreshore promenade:
  - space for walking, cycling, dwelling and dining, tree planting and landscaping
  - connects to the former Glebe Island Bridge as a possible future active transport connection to Bays West
  - Space for events such as fun runs
  - Careful consideration of sunlight in winter and shading during summer
  - avoid and minimise impacts to foreshore ecology
  - Environmentally Friendly Seawalls guide to be considered
- Protect BSP from overshadowing
- Maximise urban tree canopy
  - A minimum canopy cover of 60% to streets, 45% to the foreshore promenade and 30% to parks
  - Preference trees that are salt-tolerant, resilient to high winds, and resilient to future rainfall/drought conditions
- Low shrubs and hedges are to be provided along road sto reduce vehicle and air pollution
- Open spaces to accommodate a broad range of uses, events, experiences and activities
- Interpretive education about Aboriginal Culture is to be incorporated into signage, maps and wayfinding material
- Light reflectivity from building materials used on facades is not to exceed 20%
- Enable future electric vehicle changing for all vehicle parking
- Manage stormwater to minimise flooding and reduce the effects of stormwater pollution on receiving waterways
- Implement WSUD measures such as:
  - Irrigation is 100% recycled water in public open spaces
  - Harvesting rainwater from roofs
  - Water capture and reuse for vegetation in parks and public spaces

Note regarding the Precinct Scale Utilities - INSW:
The opportunity for precinct-scale facilities to improve sustainability outcomes is currently being investigated by Infrastructure NSW on the basis that the development of the broader precinct will provide the critical mass of demand and utilisation required to catalyse investment. Bank Street Park will be integrated into potential future precinct scale utilities as a customer.
The initial investigations will outline the technical parameters, sustainability dividends, governance and community benefits sought, for market testing when Infrastructure NSW seeks a development partner for the existing Sydney Fish Markets site. The initial investigations will also outline the potential for any easements under Bank Street Park that might be beneficial for accessing harbour heat rejection, which will be addressed in subsequent approvals.




4 ENVIRONMENTAL MANAGEMENT AND SUSTAINABILITY

Objectives

Energy and carbon

a. Establish benchmarks to help deliver a net-zero carbon precinct by 2041
b. Maximise on-site renewable energy generation
c. Reduce the need for active heating and cooling by incorporating passive design measures including design, location and thermal properties of glazing, natural ventilation, appropriate use of thermal mass and external shading, including vegetation.

Water management

d. Reduce potable water use and incorporate rainwater use and water recycling
e. Ensure an integrated approach to water management through the use of water sensitive urban design principles.
f. Manage stormwater to minimise flooding and reduce the effects of stormwater pollution on receiving waterways.
g. Ensure that development above the flood planning level as defined in the SLEP 2012 will minimise the impact of stormwater and flooding on other developments and the public domain both during the event and after the event.
h. Ensure that flood risk management addresses public safety and protection from flooding.

Waste

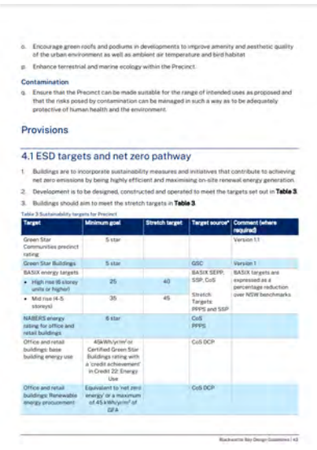
i. Minimise waste generation
j. Set high standards and targets for waste diversion from landfill and commence the path towards a circular economy.

Climate change and sea level rise

k. Mitigate identified risks of climate change and sea level rise
l. Ensure the health, safety and comfort of people in streets and buildings by minimising the heat island effect from buildings
m. Ensure development and infrastructure design is resilient to the effects of climate change.

Ecology and landscape

n. Ensure that the amenity of residents, workers and visitors is enhanced by high quality, biodiverse landscaping, and private and common open space


o. Encourage green roofs and podiums in developments to improve amenity and aesthetic quality of the urban environment as well as ambient air temperature and bird habitat
p. Enhance terrestrial and marine ecology within the Precinct.

Contamination

q. Ensure that the Precinct can be made suitable for the range of intended uses as proposed and that the risks posed by contamination can be managed in such a way as to be adequately protective of human health and the environment.

Provisions

4.1 ESD targets and net zero pathway

1. Buildings are to incorporate sustainability measures and initiatives that contribute to achieving net zero emissions by being highly efficient and maximising on-site renewal energy generation.
2. Development is to be designed, constructed and operated to meet the targets set out in **Table 3**.
3. Buildings should aim to meet the stretch targets in **Table 3**.

Table 3 Sustainability targets for Precinct

Target	Minimum goal	Stretch target	Target source[a]	Comment (where required)
Green Star Communities precinct rating	5 star			Version 1.1
Green Star Buildings	5 star		GSC	Version 1
BASIX energy targets			BASIX SEPP, SSP, CoS	BASIX targets are expressed as a percentage reduction over NSW benchmarks
• High rise (6 storey units or higher)	25	40		
• Mid rise (4-5 storeys)	35	45	Stretch Targets PPPS and SSP	
NABERS energy rating for office and retail buildings	6 star		CoS PPPS	
Office and retail buildings: base building energy use	45kWh/yr/m² or Certified Green Star Buildings rating with a 'credit achievement' in Credit 22 Energy Use		CoS DCP	
Office and retail buildings: Renewable energy procurement	Equivalent to 'net zero energy' or a maximum of 45 kWh/yr/m² of GFA		CoS DCP	

4.2 Precinct scale utilities

1. Investigations are to be undertaken into potential precinct-scale facilities, to determine how they can be included in the precinct prior to lodgement of the first development application on Government-owned land:
   a. Microgrid and grid-scale battery storage
   b. water recycling system
   c. food organic waste facilities.
   d. precinct parking (decoupled, unbundled and/or consolidated)
   e. electric vehicle charging, grid-scale battery storage.

4.3 Urban and marine ecology

1. The consent authority may require the preparation of an impact assessment (Biodiversity Assessment Report (BDAR) and Marine Impact Assessment) where terrestrial and/or marine ecology is likely to be adversely effected by development. The impact assessment should measure loss and calculate biodiversity offsets and include targeted micro-bat surveys around built structures.
2. Aquatic habitat enhancement opportunities, summarised in **Table 4**, should be considered during the detailed design of the public domain.
3. Terrestrial habitat features are to be incorporated into landscape plans and building designs. This should aim to provide both micro-habitats, stratified habitats and improve connectivity along existing or broken habitat corridors wherever practicable.

Table 4 Aquatic habitat enhancement opportunities

Location/environment	Opportunity
Subtidal sand (>2 m depth)	• Install 'oyster reefs' to provide colonisation and refuge for marine fauna.
Subtidal sand (1-2 m depth)	• Subject to boat safety considerations, install scattered rubble to connect macroalgae habitat.
Macroalgae (dense Sargassum (mesh/loom))	• Plant/transplant native macroalgae and/or increase rocky rubble to improve continuity and width.
Intertidal rocky rubble seawalls	• Construct water retaining features and increase structural complexity of intertidal or subtidal zones of seawalls.
Vertical and sloped smooth seawalls	• Replace with gentle grade wall and/or retrofit with horizontal features like flowerpots, water retaining features and complex hard surfaces.

Waste type	Target	Stretch target
Operational waste	80% operational waste diverted from landfill	90% operational waste diverted from landfill
Food and organic waste	All households to be provided with access to food and organic waste recycling	

4.5 Urban heat management and reflectivity

1. Urban heat island effects are to be reduced through:
   a. meeting canopy coverage targets in Section 3.4 of these Design Guidelines.
   b. introducing water sensitive urban design features into landscape and streetscape where practical
   c. providing shading and arranging seating to allow visitors to seek respite from heat during hot weather
   d. providing shade to active transport routes and public transport connections.
2. Shading and seating arrangements are to consider climate change projections, particularly those related to extreme heat and the number of hot days.
3. A Reflectivity Report that analyses potential solar glare from the proposed building design is to be provided with development applications for new buildings.
4. Light reflectivity from building materials used on facades is not to exceed 20%
5. All new buildings are to be designed to incorporate suitable self-shading elements to minimise undesirable summer afternoon solar gain and improve the passive sustainability performance of buildings.
6. Building materials are to be selected having regard to minimising urban heat island effect.
7. Road carriageway widths and other hardstand in the street are to be minimised.
8. Use pavements and other materials which are permeable (where appropriate), light coloured, reflective or "cool".
9. The selection of building equipment and materials is to cater to higher operating temperatures and extreme heat events to reduce local occurrence of interruptions.

4.6 Flood planning and sea level rise

1. A precinct-wide Flood Risk and Impact Assessment is to be prepared by Infrastructure NSW prior to the lodgement of the first Development Application in the precinct. The study should:
   a. be prepared in accordance with the *NSW Flood Prone Land Policy*, the principles of the *Floodplain Development Manual* 2005, the Considering flooding in land use planning guidelines 2021 and any adopted floor study and/or floodplain risk management plan prepared by the City of Sydney Council.
   b. to identify precinct-wide flood and risk mitigation for individual sites, public and open space

1.A.3 Pyrmont Peninsula Place Strategy

The Pyrmont Place Strategy ensures new investment is harnessed to deliver jobs, as well as the public benefits needed to support the delivery of great places. It is focused on the promise of the Pyrmont peninsula and its capacity for continued evolution.

The document positions Pyrmont's future growth as a diverse and attractive place of play and culture. A place loved by both locals and visitor alike. The Place Strategy aims higher than those directions set out by Pyrmont and identifies big moves that articulate ambition for the Pyrmont Peninsula to fully embrace its potential.

Implications for Bank Street Park

- Build and link a world class foreshore
- Enhance the opportunity to provide a vibrant 24-hour cultural and entertainment destination, with small bars, performance spaces, museums and other entertainment
- Realise the benefits of a new Metro station by making Pyrmont a destination, rather than the point where journeys start
- Create a low carbon and high-performance precinct, maintaining the shift to a place where people walk and use public transport to connect to other places
- More, better and activated public spaces across the peninsula

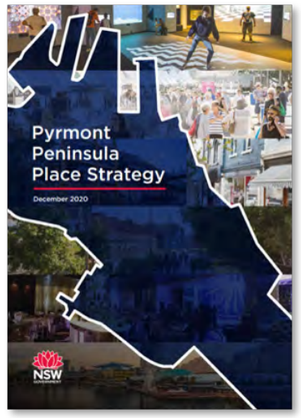


Figure 1.1 Pyrmont Peninsula Place Strategy (Source: NSW Department of Planning, Industry and Enviornment)

Figure 1.1 Pyrmont Peninsula Structure Plan (Source: NSW Department of Planning, Industry and Enviornment)

1.A.4 Pyrmont Peninsula Sustainability Framework

The report scopes a sustainability framework for the Pyrmont Peninsula Place Strategy, delivers a set of transformative place making and interventions coupled with a monitoring framework to deliver key sustainability performance outcomes.

The draft Place Strategy identifies key directions for Pyrmont,some of which are:

- Development that complements the area
- A tapestry of greener public spaces and experiences
- Building now for a sustainable future
- Creativity, Culture and heritage.

Implications for Bank Street Park

- Net zero emissions by 2041
- 25MW of new local renewable energy
- 100MWh of grid scale and EV battery storage to manage peak demands
- 1200 precinct parking spaces distributed in multi-utility hubs
- 2 hectares of new public space
- 25% canopy cover for a cooler and more resilient urban environment
- Social Infrastructure
- Green streets and active spaces

Figure 1.1 Pyrmont Peninsula Sustainability Framework (Source: NSW Planning Department)

1.A.5 City Plan 2036: Local Strategic Planning Statement, City of Sydney

This Local Strategic Planning Statement (the Planning Statement) reinforces the links between the NSW Government's strategic plans and the City's community strategic plan, Sustainable Sydney 2030, and the planning controls that guide development in City of Sydney LGA.

Figure 1.1 City Plan 2036: Local Strategic Planning Statement (Source: City of Sydney)

The Planning Statement sets out: five planning priorities, including Sustainability, and actions needed to achieve the vision:

- S1 Protecting and enhancing the natural environment for a resilient city
  - To improve the city's waterways, biodiversity corridors, green spaces and tree canopy to support the environment and a healthy community.
- S2 Creating better buildings and places to reduce emissions and waste and use water efficiently
  - To develop buildings and places that will be net zero energy by 2050, use water more efficiently, and help reduce waste.
- S3 Increasing resilience of people and infrastructure against natural and urban hazards
  - To manage the risks to people and infrastructure from flooding and stormwater, contaminated land, noise, and the longer-term implications of sea-level rise.

Implications for Bank Street Park

- Increase canopy and vegetation coverage, and incorporate water sensitive urban design for urban cooling.
- Beyond code and third-party sustainability ratings, including Green Star and NABERS.
- Facilitate the increased the installation of rooftop solar pv.
- Encourage walking and cycling by enhancing and expanding networks.
- Create car-free, pedestrian oriented public domains.
- Support and facilitate forward-looking infrastructure delivery.
- Increase affordable housing.

1.A.6 Planning Proposal – Performance Standards for Net Zero Energy Buildings, City of Sydney

The Planning Proposal: Performance standards for net zero energy buildings (planning proposal) explains the intent of, and justification for, the amendment of Sydney Local Environmental Plan 2012 (the Sydney LEP) and other relevant City of Sydney Local Environmental Plans (LEPs).

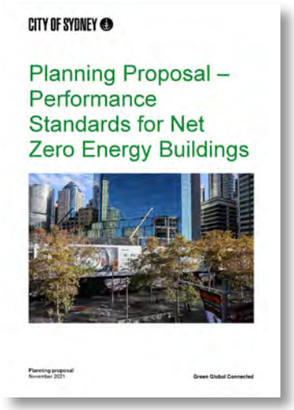


Figure 1.1 Planning Proposal – Performance Standards for Net Zero Energy Buildings (Source: City of Sydney)

The new planning rules combine energy efficiency and the use of onsite and offsite renewables to move buildings towards net zero energy use. Including the option to use offsite renewable energy purchases
The amendments provide more clarity for developers in the structure and operation of the controls, particularly for projects involving the refurbishment of existing buildings. The amendments also make it easier for existing buildings to demonstrate how they are moving towards net-zero emissions.

Implications for Bank Street Park

- Recommended, beyond code, energy efficiency performance standards or targets aligned with building asset classes, adjusted following significant community consultation.
- Draft amendment to Sydney Development Control Plan 2012 and Green Square Town Centre Development Control Plan 2012 (the draft DCP).
- Will assist developers realise their corporate targets to achieve net zero emissions.
- Contribute to a positive and sustainable business recovery for Greater Sydney and improve building resilience.
- Staged implementation in the planning proposal and draft DCP amendments also provide industry with time to adjust and certainty when planning for net zero energy development.
- Robust independent evidence base informed the development of the performance standards and timing of their implementation.

1.A.7 Environmental Strategy 2021-2025, City of Sydney

This Strategy has four directions and 23 actions, and outlines the most important measures to help make Sydney a sustainable and resilient city.

Key direction and actions relevant to sustainability at Pyrmont are:

- Direction 2 Efficient, future-proof buildings and transport powered by renewable energy.
  - 8. Improve energy efficiency, water efficiency and waste management in existing buildings.
  - 9. Drive all new buildings to be resource-efficient and net zero energy.
  - 10. Support the transition to zero-emissions transport.
  - 11. Encourage community uptake of renewable electricity and stimulate the green economy.
- Direction 3 Regenerative and inclusive city
  - 14. Incorporate the perspectives of Aboriginal and Torres Strait Islander people in environmental action.
  - 15. Address equity issues related to climate change.
  - 16. Build community resilience and momentum on climate action.
  - 17. Support the development of circular economy systems.
  - 18. Drought-proof the city by facilitating water recycling.
  - 19. Regenerate polluted waterways, air and land.
  - 20. Reduce the amount of residential waste sent to landfill through avoidance and resource recovery.

Figure 1.1 Environmental Strategy 2021-2025 (Source: City of Sydney)

Implications for Bank Street Park

- Facilitate the increased the installation of solar pv.
- Support resource efficiency (energy, water, and waste) retrofits with grants.
- Beyond code and third-party sustainability ratings, including Green Star and NABERS.
- Encourage walking and cycling by enhancing and expanding networks.
- Reusing materials and using recycled materials, avoiding the demolition of buildings (by reusing and retrofitting buildings)
- Increase canopy and vegetation coverage, and incorporate water sensitive urban design for urban cooling.
- Monitor air quality.
- Support water recycling and rainwater reuse.
- Circular economy opportunities for decentralisation of collection points needed for users and manufacturers.
- Develop Climate Adaptation and Community Resilience Plans in partnership with Alliance stakeholders, and review regularly as development progresses.

1.A.8 Greening Sydney Strategy, City of Sydney

This Greening Sydney Strategy outlines how City of Sydney will be a cool, calm and resilient city. It will increase greening and share its benefits with the entire community.

To achieve the vision, for a cool, calm and resilient city, the strategy outlines six directions, and 20 supporting actions.

1. Direction 1 – Turn grey to green
2. Direction 2 – Greening for all
3. Direction 3 – Cool and calm spaces
4. Direction 4 – Greener buildings
5. Direction 5 – Nature in the city
6. Direction 6 – Greening together

Figure 1.1 Greening Sydney Strategy (Source: City of Sydney)

Implications for Bank Street Park

- Increase canopy and vegetation coverage, and incorporate water sensitive urban design for urban cooling.
- Ensure green spaces accommodate a wide range of uses to meet diverse community's needs.
- Select plant species with consideration for future climate scenarios.
- Support the community to grow more food.
- Creating calm and healthy spaces that improve mental health and wellbeing.
- Celebrate water in the landscape .
- Increase the quantity and quality of green roofs and walls.
- Beyond code and third-party sustainability ratings, including Green Star and NABERS.
- Recognise and support Indigenous ecological knowledge
- Increase biodiversity, habitats, and ecosystem health.
- Increased use of light coloured pavement to reduce heat absorption.
- Greater use of permeable pavements to allow water infiltration.
- Integrate green infrastructure into all pedestrian, cycling and public transport solutions.

1.A.9 Planning for net zero energy buildings, City of Sydney

This report looks at how the City and other Greater Sydney councils can embed optimum energy efficiency, on-site renewable energy and off-site renewable energy to set a path to net zero in the planning and design process for larger buildings.

The project identified key changes needed inside and outside of planning to support the transition to net zero emissions and implement the performance standards. A summary of the recommendations is included below:

- Incorporating targets into planning controls
- advocating to the Department of Planning, Industry and Environment (DPIE) to implement the targets in legislation and state policies
- updating Region Plan and district plans to support the implementation of the targets across Greater Sydney
- embedding methods to recognise off-site renewables in planning
- updating design and planning tools to maintain relevance
- reviewing targets over time to maintain relevance
- providing educational programs for councils, industry and the community to assist with implementation of the targets
- exploring mandatory building performance disclosure for more asset classes
- advocating for the extension of the Renewable Energy Target to 2050 to support the use of off-site renewables.

Implications for Bank Street Park

- Recommended, beyond code, energy efficiency performance standards or targets aligned with building asset classes.
- Support for third-party sustainability rating tools, including Green Star and NABERS.
- Definition of net zero for this project:
  - a development that consumes no more energy than is provided by a combination of:
    - renewable energy generated on-site, or
    - renewable energy procured from off-site sources for a period of 5 years.
- Energy includes electricity, thermal energy and gas, and excludes diesel used for emergency back-up generation.
- Other emissions, such as those from refrigerants, are not included.

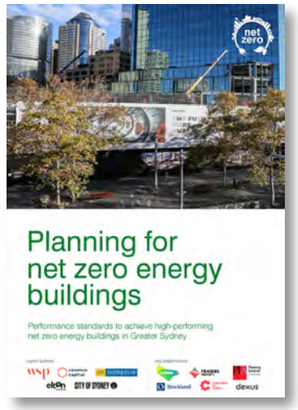


Figure 1.1 Planning for net zero energy buildings (Source: City of Sydney)

Asset class	First target (2023)	Second target (2026)
Office (base building)	Maximum 45 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent	Maximum 45 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent, and renewable energy procurement to net zero
Shopping centre (base building)	Maximum 55 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent	Maximum 45 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent, and renewable energy procurement to net zero
Hotel (whole of building)	Maximum 245 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent	Maximum 240 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent, and renewable energy procurement to net zero
Multi-unit residential (whole of building)		
6–10 storeys	Basix Energy 40	Basix Energy 45 and renewable energy procurement to net zero
11–20 storeys	Basix Energy 35	Basix Energy 40 and renewable energy procurement to net zero
21–30 storeys	Basix Energy 30	Basix Energy 35 and renewable energy procurement to net zero
Mixed use	Individual asset component targets identified above	Individual asset component targets identified above

Figure 1.1 Asset classes and targets (Source: City of Sydney)

Appendix B Development Environment

1.B.1 Creating Great Australian Cities, Property Council of Australia

The Property Council has commissioned this project to stimulate debate about the future of our cities, to improve public understanding of the issues at stake, and to help governments make good decisions for the future.

This report examines what is required to create great Australian cities. It provides an 'outside in' perspective based on our analysis of city megatrends, new research into global benchmarks, international case studies and the distinctive underlying issues present in Australian cities.
This research identified ten megatrends that will shape Australia's cities for decades to come:

- Urbanisation and metropolitan growth
- Aging population
- Exponential technology change
- Globalisation of trade, supply and value chains
- Intensifying climate change
- Re-urbanisation of jobs and capital
- Economic transition and the rise of the innovation economy
- The rise of Asia
- Resource scarcity and energy convergence
- Rising infrastructure and governance gaps

Figure 1.1 Creating Great Australian Cities (Source: Property Council of Australia)

Implications for Bank Street Park Structure Plan

- A consistent high rate of infrastructure investment and infrastructure finance innovation
- Use of public land, anchors and assets to strategic goals allows cities to unlock new areas of opportunity, catalyse new development processes, and adjust to new economic and social trends.
- A high quality of placemaking, place management and tactical urbanism
- Master-planning and pooled public budgets for neighbourhoods and areas
- Spiralling climate, pollution and health threats result in much more frequent extreme weather.
- More cities become exposed by failures to integrate climate change with public health, co-ordinate among local governments, and support the most vulnerable groups.
- New weather patterns and extreme events incur immediate costs and long-term effects on productivity, tourism and reputation associated with damaged natural assets.
- Reduced investor appeal if resilience against unexpected events is not improved.

1.B.2 Creating Great Australian Cities: Insights for Sydney, Property Council of Australia

The report sets out a further 12 broad recommendations designed to equip Australian cities for the future. The Property Council has distilled these into 3 key actions for Sydney.

When evaluated against more than 300 benchmarks to assess relative performance, Sydney is an established member of the second tier of 'contender' cities, in a peer group with cities such as San Francisco, Boston, Toronto and Madrid. Sydney's success, as evidenced by global benchmarks and the mix of its global functions, means it is now a 'contender' among the established group of global cities.

For Sydney, the 'outside-in' analysis against the comparable cities revealed that:

- Sydney's industry profile is globally facing, comparable to Toronto and Stockholm, but there is room to grow and diversify the knowledge economy to the likes for San Francisco
- Sydney is very prominent in global benchmarks relative to its size and economic role
- Sydney is ranked in the bottom third of cities globally for peak period congestion
- Sydney is one of the most unaffordable metropolitan markets in the world, substantially more expensive than nearly all North American and European metros.

Figure 1.1 Creating Great Australian Cities: Insights for Sydney (Source: Property Council of Australia)

Implications for Bank Street Park Structure Plan

- Higher than average congestion
- Lower than average public transport coverage
- Growing commute distances
- Lengthening commute times and journey times
- Low digital/internet speeds
- High carbon intensity of infrastructure systems
- Relatively low density urban forms leading to lower public transport suitability.

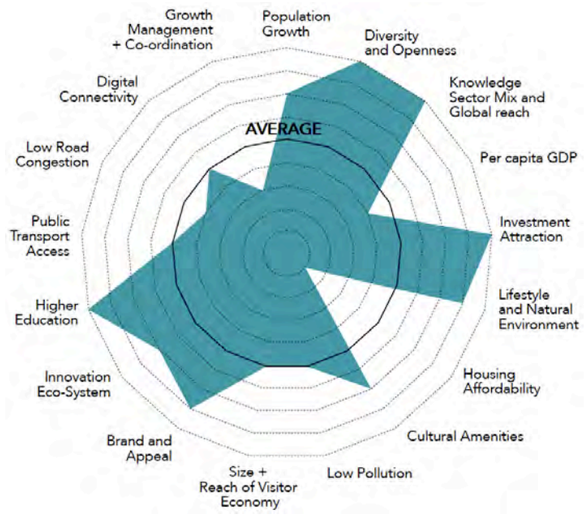


Figure 1.1 Performance of Sydney versus aggregate scores of benchmark countries (Source: Property Council of Australia)

1.B.3 A Common Language for Social Sustainability, Property Council of Australia

A common language for social sustainability, launched by the Property Council in 2018, sparked a new industry conversation about the S in environmental, social and governance.

The handbook, A common language for social sustainability, provides definitions and context of social sustainability and the 17 Sustainable Development Goals.

The handbook covers five key areas and uses examples to explain how social sustainability applies to:

- Culture and community
- Health and wellbeing
- Mobility and access
- Equity and fair trade
- Economic outcomes

Implications for Bank Street Park Structure Plan

- Contributing to 'closing the gap,' reconciliation, and Indigenous inclusion are critical success factors.
- Community engagement, investment, and partnership is key to generating buy in, shared value, and long-term success.
- Diversity of of race, ethnicity, gender, sexual orientation, socio-economic status, work experience, educational background, marital or parental status, income, age, physical abilities, geographical location, religious beliefs, political beliefs or other ideologies throughout operations is necessary.
- Placemaking reveals and responds to the location, culture and people that gives each place its unique value and authentic qualities.
- The capacity of communities and their members to survive, adapt and grow, regardless of the chronic stresses and acute shocks imposed by the economy or natural environment needs more focus.
- Health and wellbeing needs to be viewed as a state of "complete physical, mental and social wellbeing and not merely the absence of disease of infirmity", as defined by the World Health Organisation.
- The key components that influence the health, comfort and wellbeing of building occupants. IEQ is determined by many factors, including air quality, lighting and views, acoustic and thermal comfort, radiation, décor, amenity, layout and ergonomics.
- Liveability is important and broad, encompassing: the built and natural environments; economic prosperity and affordability; social diversity, stability and equity; educational opportunity; cultural, entertainment and recreation. Other factors influencing community liveability include: amenities; connection or sense of belonging; sense of safety; education provision; support for personal health; resilience and citizenship.
- The goal of accessibility is to create an inclusive society for all people, regardless of their physical, mobility, visual, auditory or cognitive abilities.
- Equal access to community resources and opportunities. No individuals or groups of people should be asked to carry a greater social or environmental burden than the rest of the community.

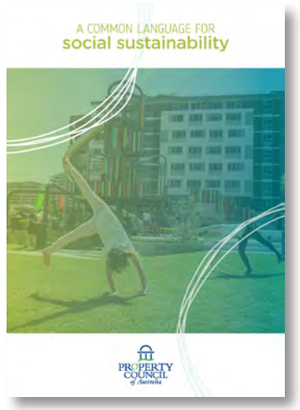


Figure 1.1 A Common Language for Social Sustainability (Source: Property Council of Australia)

Figure 1.1 Social sustainability themes (Source: Property Council of Australia)

1.B.4 Climate Positive Design, Australian Institute of Landscape Architects

Climate positive design action plan for Australian landscape architects provides clear, simple advice on what Australian landscape architects can do to understand and deliver climate positive design through good planning, design, documentation and construction and renewal.

It notes a number of mega trends and shifts that are likely to impact what landscape architects do:

- Population increase from 7 billion to 9 billion people.
- Adopting net zero 2050 pathways.
- Low carbon materials.
- Phasing out fossil gas.
- Connection to Country and Traditional Knowledge systems.
- Renewable energy visual impacts.
- Electric vehicles, virtual powerplants and distributed power.
- Autonomous vehicles.
- Decentralised power and water systems.
- Circular economies and zero waste.
- Net biodiversity gain.
- Regenerative agriculture.
- The social cost of carbon.
- International carbon price.
- Carbon border adjustment mechanisms.

Implications for Bank Street Park

- Using nature-based solutions to leverage ecology and natural systems to manage climate impacts at large scales.
- Building biodiversity to buffer against biodiversity loss and bioclimatic shifts.
- Set embodied carbon benchmarks targets and at the beginning of each project.
- Protect intact ecosystems.
- Examine what can be retained and re-used.
- Re-purpose existing buildings and elements through renovation and adaptive re-use.
- Incorporate salvaged demolition materials on site.
- Reduce the extent of high carbon elements.
- Reduce intensively managed lawns reliant on chemical fertilizer and petrol powered maintenance machinery.
- Plant as many large trees as possible to maximise long term carbon sequestration.
- Aim in general for a proportion of 70% soft to 30% hard surfaces.
- Provide a biodiverse species mix for pollinators and to build high ecological values.
- Design for longevity.
- Protecting and restoring terrestrial ecosystems.
- Protecting and restoring coastal ecosystems.
- Design for water table rise and salt water incursion.

Figure 1.1 Climate Positive Design (Source: Australian Institute of Landscape Architects)

Figure 1.1 Typical breakdown of emissions in landscape projects (Source: Australian Insitute of Landscape Architects)

1.B.6 Sydney Harbour: Our greatest asset, Committee for Sydney

The Committee for Sydney, with support from Place Design Group, have explored the current obstacles preventing Sydney Harbour from being the best it can be.

The research identifies several existing and emerging challenges which are threatening to generate economic and social spill-over costs for both the state and the nation if an overarching strategy is not adopted to manage these competing interests. Threats identified include:

- A serious decline in public access – Over the last decade, Sydney Harbour has been quietly and incrementally carved up for private exclusive use.
- Environmental degradation – 92% of Harbour sediments are now contaminated, protected sea grass beds are being destroyed, and the levels of micro-plastics in the water exceed international averages by up to five times.
- Extreme capacity constraints – Despite growth in cruise tourism, commercial and recreational boating, ferry operations, dry goods imports, and demand for berthing facilities, no plan exists to manage these interests on what is essentially finite and contested land.

The report has proposed a whole-of-government vision grounded in the following six principles:

- Prioritisation of the public interest and public access
- Protection of the longevity of the Harbour's liveability
- Clearly defined environmental custodianship
- Maintaining the Harbour as a drawcard for tourism and talent
- Tapping into the Harbour's potential as an efficient thoroughfare
- Acknowledging the Harbour's role as the lifeblood of maritime businesses

Implications for Bank Street Park

- Integration of uses and shared use of spaces rather than segregation of port and urban activities is the way of the future.
- Addressing climate change, exploring smart technologies and supporting new enterprises.
- Citizen collaboration and education is essential for ongoing co-habitation.
- Heavy metal and toxic chemical contamination.
- Inconsistent water quality, nutrients and turbidity.
- Loss of aquatic species.
- Fragile natural shorelines and shallows.
- Potential shoreline recession and inundation.
- The rise of modern pollutants, including microplastics.
- Polarisation of views around recreational boat storage.

Figure 1.1 Sydney Harbour: Our greatest asset (Source: Committee for Sydney)

Figure 1.1 Patchwork of government ownership of Sydney Harbour foreshore (Source: Committe for Sydney)

1.B.5 Decarbonising Sydney, Committee for Sydney

This report considers further actions to prepare Sydney for a decarbonised economy, building on the expected successful delivery of emissions reductions in the NSW Electricity Infrastructure Roadmap.

It identified five key moves to put Sydney on track for net zero:

1. Electrify Sydney's road transport with 40% sustainable transport by 2030; fuel emissions standards for cars and trucks; and a date to shift all car sales to electric, and all truck sales to battery or hydrogen
2. More sustainable buildings with electric space heating, water heating and cooking, gas phased out in new buildings, and residential energy performance disclosure
3. Increase distributed energy with incentives for rooftop solar, battery storage and smart meters, and better access for low-income groups, renters and others
4. Prepare the energy grid with innovative tariffs and demand management measures to reward customer behaviour, and vehicle to grid technology
5. Work collaboratively across Greater Sydney to track and manage progress to emissions goals, and accelerate coal closures to make up the deficit if needed.

Implications for Bank Street Park

- Increase EV charging infrastructure in the public domain and in private developments of all types.
- Supporting retrofitting of EV infrastructure in existing buildings.
- Strengthen building codes and guidelines for focus on passive heating and cooling – and reduce reliance on electricity where possible.
- Use incentives to accelerate the uptake of rooftop solar and distributed battery storage,
- Support access to community-scale batteries for lowrise commercial or public buildings, which would also help lower income households access solar

Figure 1.1 Decarbonising Sydney (Source: Committee for Sydney)

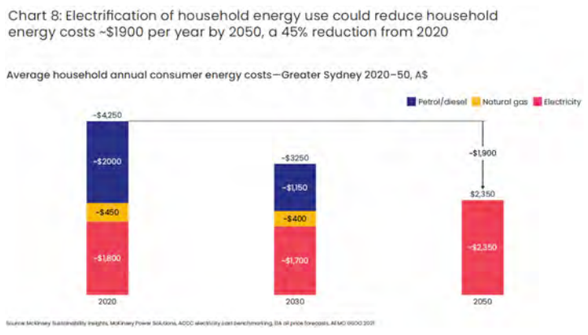


Figure 1.1 Average household annual consumer energy costs—Greater Sydney 2020–50, A$ (Source: Committee for Sydney)

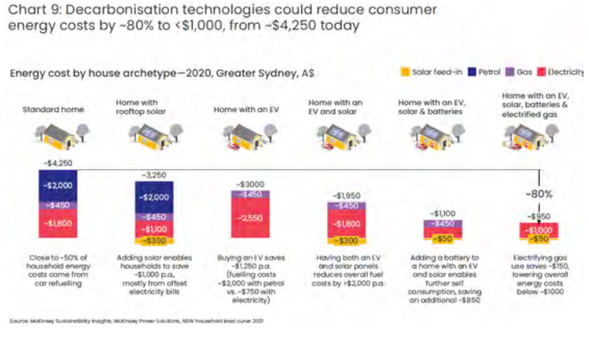


Figure 1.1 Energy cost by house archetype—2020, Greater Sydney, A$ (Source: Committee for Sydney)

1.B.7 Unlocking the pathway: Why electrification is the key to net zero building, Australian Sustainable Built Environment Council (ASBEC)

A report from the Australian Sustainable Built Environment Council (ASBEC) confirms 100% electrification is the lowest cost, fastest emissions reduction pathway for Australia's built environment.

SPR modelled three 'plausible but divergent' decarbonisation scenarios: 100% electrification; a combination of electrification and green hydrogen; and a 'base case', representing 'business as usual' of electrification, fossil gas, green hydrogen and carbon offsets.
This report finds 100% electrification is the lowest cost option to decarbonise our built environment – but lowest cost does not mean no cost. Our detailed analysis by building type, geography and lifecycle reveals that electrification, while necessary, is not always cost-beneficial. Failing to acknowledge and address these costs will significantly impede the transition to net zero building operations.

Implications for Bank Street Park

- Energy efficiency matters to the electrification agenda. A wealth of literature supports a "fabric first" approach to energy efficiency, in which the building does the hard work rather than bolt on energy devices.
- Improvements to energy efficiency can decrease the space requirements and size of equipment, minimise the need for purchased energy, and enable a higher share of operational costs to be covered by rooftop photovoltaics.
- The building sector cannot rely on offsets in the future, as these will need to be allocated to sectors that are harder to abate in other words, those industries that don't have the decarbonisation solutions readily available.

Figure 1.1 Unlocking the pathway: Why electrification is the key to net zero building (Source: ASBEC)

Figure 1.1 Projected future costs of naturebased offsets in Australia (Source: ASBEC)

1.B.8 Issues Paper: Reshaping Infrastructure for a net zero emissions future, Infrastructure Sustainability Council of Australia (ISCA), ClimateWorks Australia, and the Australian Sustainable Built Environment Council (ASBEC)

The *Issues Paper: Reshaping Infrastructure for a net zero emissions future* is designed to progress a new conversation to better understand the challenges and opportunities in reshaping transport, energy, water, communications and waste infrastructure for a net zero emissions world.

It is the first step in a broader effort to reshape Australia's infrastructure agenda and makes the case for why emissions reductions should be prioritised in infrastructure advice and decisions today.

Implications for Bank Street Park

- Planning for sector transitions to net zero emissions (e.g. in electricity and transport), and identifying strategic infrastructure needs and priorities to enable these transitions.
- Examining proposed needs, issues and opportunities for compatibility with a broad set of scenarios achieving net zero emissions by 2050.
- Designing adaptive strategies, where required, to ensure solutions are resilient to future changes.
- Drawing on existing standards to guide design and lifecycle decisions, such as Green Building Council of Australia's Green Star tool, and ISCA's Infrastructure Sustainability Planning Rating Tool. Upgrading or developing new tools where relevant.
- Prioritising and investing in infrastructure projects critical to enabling a net zero emissions future.
- Undertaking detailed cost-benefit analysis (and sensitivity tests of demand and cost modelling) of chosen project design, testing for robustness across a variety of future climate change scenarios, including multiple net zero emissions by 2050 scenarios.
- Setting emissions performance standards for infrastructure, including caps for emissions embodied in construction materials, produced during construction and operation.
- Seeking opportunities to reduce operating emissions (e.g. through retrofitting infrastructure, or through renewable power, energy efficiency, electrification, and offsets)
- Reviewing projects post-completion to evaluate whether a project achieved its emissions performance objectives, along with its strategic objectives and economic performance.

Figure 1.1 Issues Paper: Reshaping Infrastructure for a net zero emissions future (Source: ISCA, ClimateWorks Australia, and ASBEC)

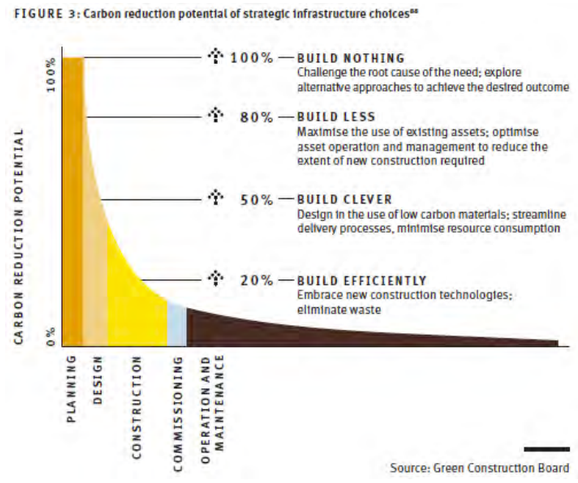


Figure 1.1 Carbon reduction potential of strategic infrastructure choices (Source: ISCA, ClimateWorks Australia, and ASBEC)

1.B.9 Five ways the built environment can help Australia transition to a net zero future, Australian Sustainable Built Environment Council (ASBEC)

The Australian Sustainable Built Environment Council (ASBEC), as the peak body of key organisations committed to a sustainable, productive, resilient built environment in Australia, urges the federal government to seize the unique opportunity the built environment offers to dramatically reduce carbon emissions in highly cost-effective ways that will also stimulate the economy.

In this policy platform for COP26, ASBEC recommends five practical policies across residential, commercial and public buildings that should be implemented by federal government to drive emissions reduction:

1. Give households the energy performance information they need to achieve healthy, affordable, comfortable homes
2. Demonstrate government leadership through high performing government buildings
3. Position Australia as a global leader in high performance building products and technologies
4. Provide economic stimulus by incentivising building upgrades
5. Deliver a Net Zero Carbon Ready building code and pathways to decarbonise building operations

Implications for Bank Street Park

- Support beyond code energy efficiency standards.
- Publicise consistent, easily-understood information about home energy performance.
- Prioritise passive design strategies to maximise energy efficiency.
- Implement a best practice governance model based on NABERS that brings governments together with industry to collectively manage energy performance benchmarks for homes.
- Assertive action is needed to raise the energy performance of new buildings and incentivise investment in existing building upgrades.
- Measures could include strong minimum standards for new buildings and fitouts, targets for onsite energy efficiency and requirements around renewable energy, offsite renewable energy and offsets.
- Promote the adoption of building sustainability rating systems such as Green Star and NABERS to drive sustainable outcomes.
- Review of existing accommodation and leasing policy presents an opportunity for leadership in the transition towards net zero buildings.
- Building and precinct level batteries.
- Thermal or battery energy storage at the building level to support local energy generation.
- Using electric vehicles and building and precinct level batteries to provide distributed energy storage, flatten energy demand and reduce the impact of peak events.
- 10% reduction in embodied emissions in new commercial and residential buildings.
- Incentivise deep retrofits to improve performance.

1.B.10 Green Star Buildings v1, Green Building Council of Australia (GBCA)

The latest version of the Green Star Buildings rating tool is the first to be aligned with the new focus areas aligned with megatrends.

Some key insights we think will translate over to the newest version of the Green Star Communities tool:

Implications for Bank Street Park

- 10 Minimum Expectations that must be achieved by all projects
- 6 Star rated projects must be designed to be fossil fuel free, powered by renewables, and built with low carbon materials
- Rewards products that have lower environmental impact, are transparent, respect human rights, and are lower in carbon content
- Creating a driver for low carbon products by introducing a requirement that must be met by all buildings to reduce their embodied carbon to achieve a rating
- Climate Positive Pathway will increase in stringency over time.

Figure 1.1 Green Star Buildings v1 (Source: GBCA)

Figure 1.1 Green Star Buildings v1 categories (Source: GBCA)

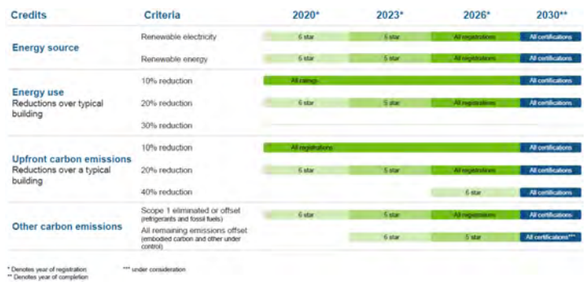


Figure 1.1 Increasing stringency of Climate Positive Pathway over time (Source: GBCA)

1.B.11 Green Star Future Focus, Green Building Council of Australia (GBCA)

In March 2018, Green Building Council of Australia (GBCA) embarked on an ambitious journey to reshape the Green Star rating system and create the next evolution of the tools.

Figure 1.1 Green Star Future Focus (Source: GBCA)

Green Star Future Focus will see the rating system evolve and adapt to ensure the sustainable built environment delivers what it needs to, whilst also responding to global megatrends and emerging challenges.

Implications for Bank Street Park

- Amenities that enhance a person's well-being, encourage healthy and active transport and lifestyle decisions.
- Mimic or connect with nature and provide a comfortable environment.
- Conceived, built and operated to reduce or eliminate toxic materials, are well ventilated and lit.
- Ready to address the future impacts of climate change and to respond positively to other changes and shocks.
- Resilient to natural disasters and man-made impacts including changing technology and demographics.
- Resilient to long-term risks to its value.
- Minimise exposure to risks negatively impacting people's health and human rights.
- Continue working in the face of adversity.
- Make the community and surroundings more resilient too.
- Highly efficient with the use of our limited natural resources.
- Lower energy consumption thanks to smarter design.
- Renewable energy powers the buildings and infrastructure (on-site or off-site).
- Mostly fossil-fuel free and is carbon neutral by offsetting all its emissions.
- Reducing and offsetting its embodied carbon.
- Smart, well-designed, managed and governed.
- Safe, comfortable, inclusive and of high amenity.
- Improve the urban fabric, enhance the local infrastructure, and provide value to the community.
- Designed for everyone, beyond accessibility compliance laws.
- Designed to respect and celebrate our culture and our history.
- Built with consideration of the rights of future occupants, the workers involved, those involved in the supply chain, and those in the surrounding community.
- Considerate of the current and historic impacts to our natural environment.
- Reduce any impact on the site and enhance it as much as possible.
- Contribute to increasing the ecological value and biodiversity of the site and beyond.
- Connect green corridors in the city and work to enhance a city's biodiversity.

1.B.12 Green Star for Communities: A Future Focus Discussion Paper, Green Building Council of Australia (GBCA)

Green Star Communities aims to continue the success of Green Star on a precinct scale.

Figure 1.1 Green Star for Communities: A Future Focus Discussion Paper (Source: GBCA)

It aims to provide a clearer definition of a sustainable precinct, as well as set a pathway for net zero precincts to be delivered over the next decade. Green Star Communities:

- Introduces a new set of categories and credits reflecting issues relevant to the market now and in the future
- Prioritises the elimination of carbon emissions from the built environment
- Considers impacts at a precinct and building level
- Establishes a clear, well-defined entry point for best practice precincts
- Caters to distinct sectors through the introduction of sector specific credit

Implications for Bank Street Park

- A new definition of a community
- A broader scope of issues with a clearer and more accessible language.
- All projects to deliver carbon reductions.
- Exploring the goal of net zero emissions precincts by 2030.
- Including a focus on buildings.
- The rating tool will place greater weight on the sustainability of built form, whilst acknowledging diverse levels of control across precinct types.
- Ensuring that all projects deliver a minimum set of clearly defined outcomes that align with what stakeholders are wanting in a sustainable precinct, in the short and long term.
- Higher levels of sustainability leadership, with the recalibration of requirements for 4,5 and 6 star.
- More consistent categories and language across all rating tools -to maximise how tools may work together, reduce documentation, and increase understanding of the benefits.

1.B.13 Climate Positive Roadmap for Precincts, Green Building Council of Australia (GBCA)

The Climate Positive Roadmap for Precincts contains a set of principles to guide precinct carbon reductions and ambitious targets for all new precincts to be climate positive by 2030 and existing precincts by 2050.

Figure 1.1 Climate Positive Roadmap for Precincts (Source: GBCA)

It spells out the five key actions to achieve climate positive precincts:

1. Embed climate positive pathways into all stages of planning.
2. Commit to fossil fuel-free precincts, and ensure policy and planning processes support this ambition.
3. Remove the barriers to low carbon precinct energy solutions.
4. Drive lower upfront carbon in materials and construction activity.
5. Commit to delivering low carbon buildings in all precincts.

Implications for Bank Street Park

- Building & precinct scale energy generation and storage.
- Electric vehicle optimisation for transport, solar energy capture and building consumption.
- Intelligent microgrids and virtual power plants balancing energy supply and demand.
- Precinct scale energy trading supported by networked metering and retail platforms.
- Offsite power purchase agreements for renewable energy.
- Capture of waste heat and coolth for re-use.

1.B.14 WELL Standard, International WELL Building Institute (IWBI)

The WELL rating system follows performance-based criteria that measure, monitor and certify parts of the built environment that have an innate impact on wellbeing and health of humans.

Its aim is to help prevent chronic diseases by using the built environment through the improvement of nutrition, mood, fitness, sleep patterns and performance of its occupants. It assesses how “healthy” a building is across 10 categories: air, water, nourishment, light, movement, thermal comfort, sound, materials, mind and community.

Figure 1.1 WELL Building Standard (Source: IWBI)

Figure 1.1 WELL Community Standard (Source: IWBI)

Implications for Bank Street Park

- The COVID-19 pandemic had led to a rapid uptake of health, safety and well-being considerations in buildings, communities and organisations.
- Australia leads the market with about 25 per cent of commercial office space now WELL-enrolled, largely spurred by workplaces wanting to support a return to the workplace.
- The biggest momentum has come from the large real estate owners, which then influences the rest of the market.
- The existence and popularity of a health and wellbeing focused third party rating system in the marketplace demonstrates the enthusiasm from investors, tenants, and the public for places that contribute positive health outcomes.
- The rate of adoption both locally and globally demonstrates recognition that the Standard, its evidence-base, and its future pathway represents an authoritative exemplar of healthy places.

1.B.15 Climate Active

The Climate Active Carbon Neutral Standard is a voluntary standard to manage greenhouse gas emissions and to achieve carbon neutrality, and is the only government accredited carbon neutral certification scheme in Australia.

Climate Active is a a world-leading, government-backed certification that is aligned to national and international greenhouse gas accounting protocols. focused on operational carbon emissions at present, with a probable future focus on upfront carbon as well.

It provides best-practice guidance on how to measure, reduce, offset, validate and report emissions that occur as a result of the operations of a precinct.

Climate Active certification is available for :

- Organisations (Certification that the business operations of an organisation have resulted in a state of carbon neutrality)
- Products (Certification that a product being created, used and disposed has resulted in a state of carbon neutrality)
- Services (Certification that the provision of a service has resulted in a state of carbon neutrality)
- Events (Certification that the activities associated with running an event have resulted in a state of carbon neutrality)
- Buildings (Certification that the operations of a building have resulted in a state of carbon neutrality)
- Precincts (Certification that the operations of a precinct have resulted in a state of carbon neutrality)

Figure 1.1 Climate Active Carbon Neural Standards for Precincts and Buildings (Source: Australia Government)

Implications for Bank Street Park

- Climate Active certification represents the Gold Standard for carbon neutral certification in Australia.
- Building certification is available through the National Australian Built Environment Rating System (NABERS) or the Green Building Council of Australia (GBCA).
- Climate Active certification sends a clear signal that organisations are serious about addressing climate change and committed to sustainability, innovation, and industry leadership.
- It provides an edge over competitors and taps into an increasing number of consumers driving the market for sustainable and ethical products and services.

1.B.16 Urban Design Statement

The Urban Design Statement prepared by FJMT outlines the urban design responses to the submissions received from the community members, groups and stakeholders on the Blackwattle Bay State Significant Precinct Study about the proposed rezoning of the site.

This report outlines the urban design responses to the submissions, together with the changes proposed in the Revised Precinct Plan and submitted with the State Significant Precinct Study.
The submissions identified a broad range of matters which have been grouped into 5 key themes:

a) Built Form
b) Place
c) Enviornment
d) Planning and process
e) Movement

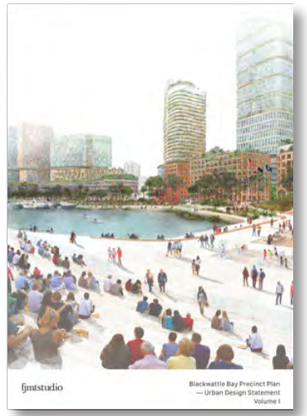


Figure 1.1 Urban Design Statement (Source: FJMT)

Implications for Bank Street Park

- Inclusion of 10m wide boardwalk
- Expand width of foreshore promenade
- Accommodating active movement corridor parallel to the foreshore promenade
- Public domain to consider opportunities for acknowledging and celebrating Aboriginal and Torres Strait Islander living cultures through art, performance, architecture, landscaping and other creative expression
- Inclusion of landscape to deliver local wind mitigation
- Water Sensitive Urban Design - to be addressed by ESD

1.B.17 Planning for net zero energy buildings, City of Sydney

This report looks at how the City and other Greater Sydney councils can embed optimum energy efficiency, on-site renewable energy and off-site renewable energy to set a path to net zero in the planning and design process for larger buildings.

The project identified key changes needed inside and outside of planning to support the transition to net zero emissions and implement the performance standards. A summary of the recommendations is included below:

- incorporating targets into planning controls
- advocating to the Department of Planning, Industry and Environment (DPIE) to implement the targets in legislation and state policies
- updating Region Plan and district plans to support the implementation of the targets across Greater Sydney
- embedding methods to recognise off-site renewables in planning
- updating design and planning tools to maintain relevance
- reviewing targets over time to maintain relevance
- providing educational programs for councils, industry and the community to assist with implementation of the targets
- exploring mandatory building performance disclosure for more asset classes
- advocating for the extension of the Renewable Energy Target to 2050 to support the use of off-site renewables.

Implications for Bank Street Park

- Recommended, beyond code, energy efficiency performance standards or targets aligned with building asset classes.
- Support for third-party sustainability rating tools, including Green Star and NABERS.
- Definition of net zero for this project:
  - a development that consumes no more energy than is provided by a combination of:
    - renewable energy generated on-site, or
    - renewable energy procured from off-site sources for a period of 5 years.
- Energy includes electricity, thermal energy and gas, and excludes diesel used for emergency back-up generation.
- Other emissions, such as those from refrigerants, are not included.

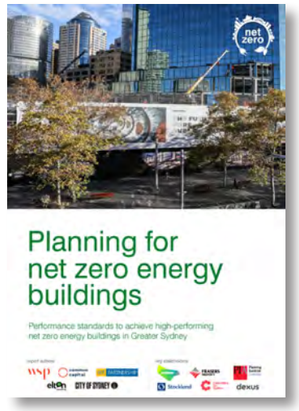


Figure 1.1 Planning for net zero energy buildings (Source: City of Sydney)

Asset class	First target (2023)	Second target (2026)
Office (base building)	Maximum 45 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent	Maximum 45 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent, and renewable energy procurement to net zero
Shopping centre (base building)	Maximum 55 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent	Maximum 45 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent, and renewable energy procurement to net zero
Hotel (whole of building)	Maximum 245 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent	Maximum 240 kWh/yr/m², or equivalent NABERS Energy or Green Star Buildings credits, or equivalent, and renewable energy procurement to net zero
Multi-unit residential (whole of building)		
6–10 storeys	Basix Energy 40	Basix Energy 45 and renewable energy procurement to net zero
11–20 storeys	Basix Energy 35	Basix Energy 40 and renewable energy procurement to net zero
21–30 storeys	Basix Energy 30	Basix Energy 35 and renewable energy procurement to net zero
Mixed use	Individual asset component targets identified above	Individual asset component targets identified above

Figure 1.1 Asset classes and targets (Source: City of Sydney)

Appendix C Case Studies

3.8 Case Studies

3.8.1 Vancouver Waterfront Park, Washington

On the north bank of the Columbia River, Vancouver, WA, is Vancouver's newest waterfront development that brings the downtown to the river's edge. In partnership with the City, Gramor, and a multi-disciplinary team, PWL Partnership created the detailed design for the public realm, parks, and open space plan along with the detailed waterfront park design for this 29-acre/12-hectare project site. This new mixed-neighbourhood includes residential, retail, commercial, civic, park spaces, and environmental restoration areas—it makes space for 6,000 new residents and 5,000 office workers

Commonalities with Bank Street Park:

- The park is a three-hectare model for urban transformation and placemaking
- The project goal—to revive the former industrial site—connects historic downtown and Esther Short Park with the waterfront. Over 75 years as a working river cut off access, leaving the foreshore contaminated

Social Initiatives:

- The Landscape Architects, with the developer and project team, were able to weave the ecological restoration of the foreshore with the social and cultural restoration of the city: a continuous, varied waterfront experience developed from the water's edge
- Pathways wrap and weave from the shoreline to the street edge, mimicking the flow of water; riverine expressions emerge in paving patterns and lead visitors to the cantilevered pier at the foot of Grant Street.
- An intense collaborative process between the public artist's team and landscape architects yields a design where one cannot tell the difference between art and landscape.
- Expressions of the Columbia's character are imbued in each detail: the water feature, designed in collaboration with the artist, in its execution is striking; wayfinding and interpretive elements lend colour and structure; light posts and custom furniture are evocative in form, and natural play elements complete a cohesive system throughout the park.

Sustainable Initiatives:

- Prioritizing local and symbolic materials was both sustainable and conceptual.
- Local basalt embedded throughout the site represents the vastness and variedness of the watershed in many forms, from rough-hewn to crisp edges.
- Heavy timber planks and mill artifacts reference historical working river uses, while hardscape plaza patterning emerges from early traditional craft of original inhabitants of the area.
- A cable-stayed structure projecting more than 30 metres over the water's concept emerged from the enduring spirit and function of the river, conveying recreational and industrial vessels
- The form was designed with an open centre—and without in-water structures—to maintain unhindered aquatic species migration and minimize disruption of the riverbed.

Delivery Model

- Columbia Waterfront, LLC a private investors group led by Gramor Development, worked closely with the City, Port of Vancouver and local residents to create a master plan for downtown waterfront development.
- Columbia Waterfront, LLC, allocated the 7-acre park land to the City to help reconnect people to the Columbia River and also committed to help fund initial park improvements





Figure 1.1 Vancouver Waterfront Park, Washington (Source: Landezine)

3.8.2 The Canopy Precinct, Sydney

Built on a former Council-owned car park, The Canopy Precinct delivers a unique urban experience to Lane Cove, a suburb known for its village atmosphere and its rich and varied bushland landscape. Given its location just 10km from the Sydney CBD, like many Sydney suburbs, Lane Cove is experiencing population pressures as density increases.

Commonalities with Bank Street Park:

- By inserting this new landscape into the Lane Cove Town Centre urban fabric, the master plan provided an open space which recognised and celebrated the diversity of the community, the unique village atmosphere and the bushland setting while ensuring seamless flow into and around the site.
- With a combination programmable event and activation spaces with large-scale nature and water play, the Canopy Precinct has been designed for 18-hour activation, offering a combination of programmes to ensure triangulation and use for the majority of the day.

Social Initiatives:

- Sandstone outcrops are combined with opportunistic plants to create a subtle but vivid interface with the street edge and neighbouring residents.
- The community feedback was for a public domain that encouraged a range of community uses, strengthened pedestrian links between the existing Lane Cove Plaza

Sustainable Initiatives:

- The opposite edge of the precinct presents itself to suburban Lane Cove and has utilised naturalistic design cues with Indigenous tree, shrub and groundcover planting, expanding local wildlife corridors and embracing the landscape character inspired by the shores of the Lane Cove River and National Park
- With well-lit alfresco spaces, restaurants, monthly markets, a playground and additional water and nature play spaces, creating a unique urban experience for the community.

The Canopy Precinct is a demonstration of how local councils can enhance the community and the economy of their area through an increase in open spaces, using existing assets, such as a publicly owned car park. Lane Cove Council were keen participants in the journey to deliver all layers that are desirable when creating places for people to ensure success and sustainability. The project has been a catalyst for the development of the local economy and physical town centre.

Delivery Model:

- Lane Cove Council funded project
- The project was a true exercise in collaboration at all levels. From the earliest stages, the Council and the design team engaged closely with community members, working on user feedback and findings to create a space that would meet their needs.

Figure 1.1 The Canopy Project, Sydney (Source: Landezine)

3.8.3 Improvements to James Canning Gardens, Toronto

The park, part of an important pedestrian open space corridor east of Yonge Street, had become a secluded and unwelcoming space with poor lighting, overgrown vegetation, minimal seating, and a neglected playground. Through extensive consultation with the community and stakeholders, the team learned that safety, visibility, and accessibility were critical concerns. Working with the City of Toronto, the City Councillor, and a local developer, Janet Rosenberg & Studio prepared The Yonge Street Linear Parks Master Plan (2017) for improvements to the three connected parks in the system: James Canning Gardens, Norman Jewison Park and George Hislop Park.

Commonalities with Bank Street Park:

- The Master Plan proposed connected but unique designs concepts for each of the parks in the system, drawing inspiration from the cultural and natural heritage of the area, and exploring opportunities to incorporate engaging elements that would support the project goals.

Social Initiatives:

- The playground was relocated to a more visible and prominent area in the park and is comprised of a porous surface, elevated above the tree roots.
- New play elements include accessible play structures, balance features, and a large climbing structure.
- Spaced throughout the park, the playful stools offer casual spots to enjoy a coffee and discussion with a friend.

Sustainable Initiatives:

- To preserve the beautiful, mature honey locust trees on-site, intensive arboriculture investigations were completed using air spades and low-pressure vacuum techniques to expose, locate, and map the significant roots.
- Roots were protected by custom-designed footings that bridged significant root zones. Seven custom illuminated Corten Steel archways, standing 4.5 m tall, extend through the park, providing a warm level of lighting, clear site lines, and a distinct sense of place.
- As a piece of green infrastructure, the bump-out is designed to collect stormwater from the sidewalk and road.

Delivery Model

- The team worked with the City of Toronto‘s Transportation Department to provide a vegetated boulevard bump-out that extends into the road, slowing down vehicles and allowing for a shorter pedestrian crossing.
- Extensive consultation with the community to implement their needs for the park

Figure 1.1 James Canning Gardens, Toronto (Source: Landezine)

3.8.4 Headland Reserve, Barangaroo

Commonalities with Bank Street Park:

- Headland Reserve at Barangaroo is a park that gives back to the public through the repurposing of a former neglected industrial site on the waterfront
- The reserve planted 75 000 native plants, with the reserve having high tree canopy targets and native plant sustainability initiatives
- The park will also have cycling and pedestrian pathways that link to the wider Blackwattle Bay precinct and Sydney cycling network
- Bank Street will also commission public art that Connects with Country
- Bank Street will be climate positive from planning, design to operations, similar to the Reserves approach to sustainability

Social Initiatives:

- Network of cycling and walking trails
- Swimming available at Marriwina Cove
- Free public artworks
- 10 minute audio-visual artwork at entrance to the Cutaway
- The reserve always has events happening for different users such as free concerts, celebrating FIFA World Cup and Caring for Country children workshops. This is something that Bank Street could implement for the wider community of Blackwattle Bay.
- Community Gardens
- Different walks and various viewpoints to the harbour

Sustainable Initiatives:

- Transformation of 6 hectares of disused container storage site to public park
- 75,000 native plants that have been curated to mimic the landscape before colonists arrived
- 84 different species of plants
- 10,000 sandstone blocks, 95% of which were extracted from underneath Barangaroo
- Marine habitat enhancement
- Rainwater capture
- Living Seawall- using oyster shells, crushed sandstone and brown kelp to attract marine species, continuous monitoring of the results

Delivery Model

- The Barangaroo Precinct was transformed through development agreements that firmly place sustainability and the commitment to quality open space at the fore and provide for the development levies that fund projects
- The NSW Government partnered with:
  - Lendlease: Barangaroo South
  - Aqualand: Central Barangaroo
  - Sydney Metro: Barangaroo Metro Station
  - Crown Resorts: Crown Sydney

Figure 1.1 Barangaroo Headland Reserve, Sydney (Source: Barangaroo Delivery Authority)

Figure 1.1 Sandstone blocks mimic local landscape, Sydney (Source: Barangaroo Delivery Authority)

Figure 1.1 Walkways at Headland Reserve and native plants, Sydney (Source: Barangaroo Delivery Authority)

Figure 1.1 Walkways at Headland Reserve and native plants, Sydney (Source: Barangaroo Delivery Authority)

3.9 Summary of key findings

The preliminary research conducted serves as a foundation for shaping the subsequent Sustainability Vision, Framework, and Strategy for Bank Street Park.

This analysis has unearthed pivotal insights that are set to guide the integration of core principles within the project's design and overarching sustainability strategy.

Embracing Climate Responsibility
The research underscores the urgency of climate action, emphasizing responsible consumption, renewable energy adoption, and impact mitigation. These elements will anchor the project's strategy, guiding the integration of sustainability imperatives.

Enhancing Climate Resilience
A robust climate adaptation strategy emerges as imperative, focusing on efficiency gains, resource sharing, and preparedness for changing climatic dynamics. Flood risk mitigation, comprehensive water-sensitive urban design, and the preservation of green spaces will be integral in bolstering Bank Street Park's resilience.

Balancing Ecological Integrity
Recognizing the intricate nexus between development and ecological vitality, the research highlights the importance of integrating existing habitats, leveraging nature-based solutions, and harnessing ecosystem services. These elements will sustain the region's rich biological diversity.

Elevating Social Well-being
The interplay between urban spaces and residents' well-being is emphasized, with a focus on nurturing spaces that enhance quality of life. The incorporation of elements that promote wellness aligns with the project's ethos and future development.

Fostering Inclusive Communities
The research accentuates the significance of inclusivity, equity, and shared value. These dimensions will be embedded in Bank Street Park's design and vision, nurturing an empowered and vibrant community.

Holistic Value Chains
A pivotal lesson arises from examining comprehensive value chains, highlighting the importance of responsible product lifecycle management. This insight will guide the project's approach to sustainability and its role as a responsible global member.

Assurance through Frameworks
From the analysis, we've learned the vital role of structured frameworks and clear assurances in driving sustainable development. This means future projects, like this park, should focus on establishing transparent and publicly shared environmental goals. These goals must align with both local needs and global sustainability standards and expectations. The review also highlighted the importance of using independent tools to guide and regularly check and report on our progress, ensuring we're accountable and on track. Findings suggest a clear path forward for any new development, including this park, should be guided by well-defined, publicly communicated goals, and measured against local and global environmental benchmarks to ensure we're contributing positively to both our community and the planet.

Case Studies' Common Themes
The synthesis of diverse case studies underscores several common principles of sustainability:

- Community Collaborations: Collaborative engagements with communities enriches contextual understanding and consequently enhances the place's efficacy.
- Government Synergy: Collaboration with governmental entities, particularly transport departments, propels holistic urban integration.
- Preservation of Green Infrastructure: Retaining high-value, indigenous flora underscores the importance of sustaining natural assets.
- Indigenous Partnerships: Collaboration with First Nations elevates the project's cultural integrity and fosters continuous learning.
- Active Mobility Networks: Intricate pedestrian and cycling pathways enhance mental and physical well-being.
- Focused Sustainability Goals: Explicit linkage of sustainability aspirations to specific organisations amplifies commitment.
- Social Sustainability Emphasis: The provision of public infrastructure bolsters social sustainability, with independent verification assuring building or community adherence.
- Financial and Business Support: Inclusion of financing and business services enhances holistic well-being.

In summary, Bank Street Park embarks on an orchestrated journey, orchestrating these multifaceted findings into a harmonious symphony that will reverberate through its environmental, social, and economic dimensions.

Defining Attributes and Guiding Framework
Derived from a diverse range of sources, these attributes serve as the cornerstone for the Sustainability Strategy. This strategic blueprint encompasses overarching themes, guiding principles, and actionable steps. As we transition into this pivotal phase, these distinct attributes, distilled from an extensive synthesis process, chart the course towards a sustainable future for Bank Street Park.

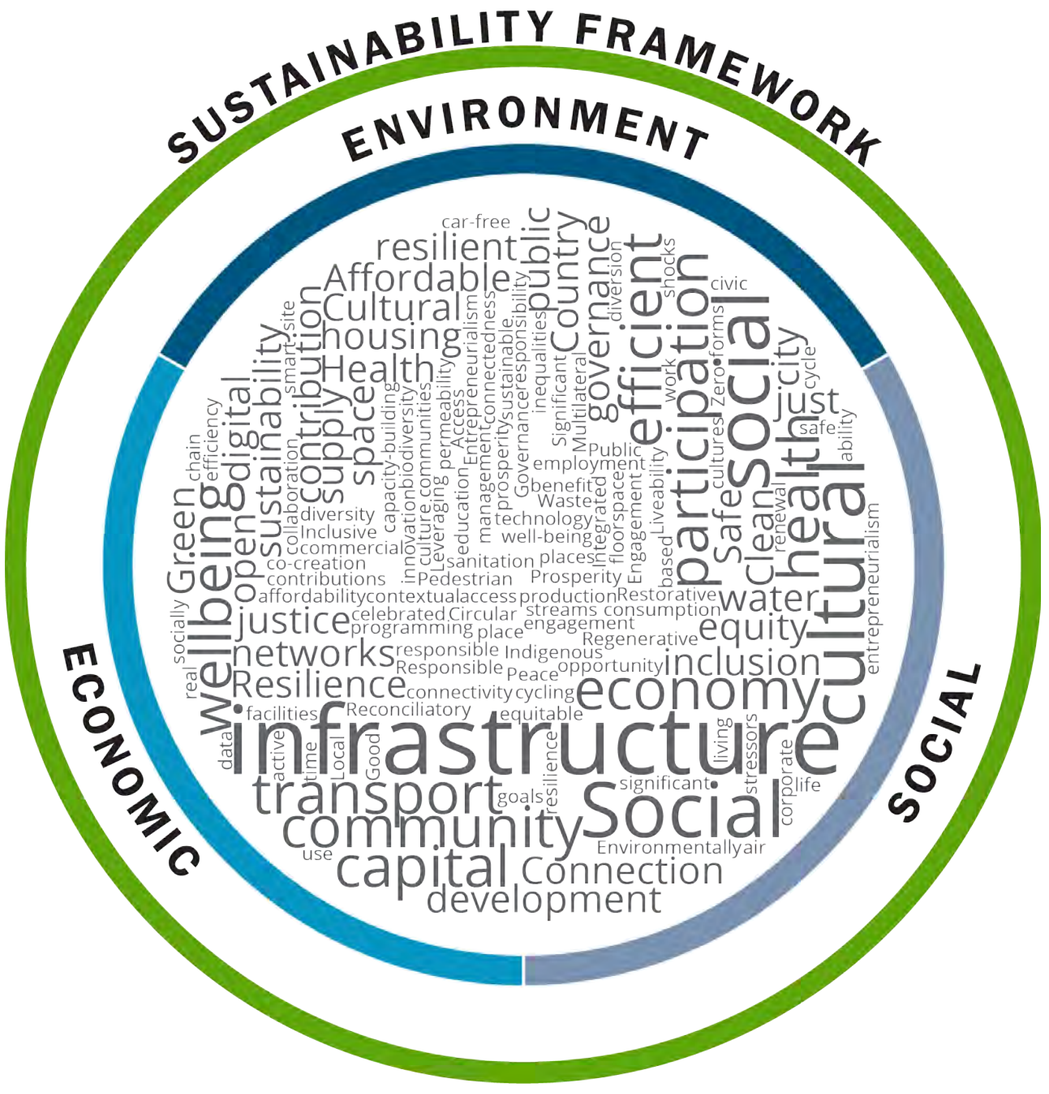


Figure 1.1 Recurring attributes that define sustainable development.