



Ecologically Sustainable Development (ESD) Report

45-53 Macleay Street, Potts Point NSW

State Significant Development Application
SSD - 79316759

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E-LAB Consulting

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Sustainability



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1 EXECUTIVE SUMMARY

This Ecologically Sustainable Development (ESD) Report prepared for 45-53 Macleay Street, Potts Point 2011 in support of a State Significant Development Application (SSDA) for the construction and operation of the proposed residential development, reference SSD-79316759.

This report addresses the Secretary’s Environmental Assessment Requirements (SEARs) issued for the project, notably:

ITEM	DESCRIPTION OF REQUIREMENT	SECTION REFERENCE
Ecologically Sustainable Developments	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 4
	Where relevant, provide an assessment of the development against the standards for non-residential development set out in Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022.	N/A

In addition to the SEARs requirements, the development’s governing ESD principles and performance requirements are in alignment with the following planning frameworks, legislative policy, guidelines and the like:

- NSW Environmental Planning and Assessment (EPA) Regulation 2021
- State Environmental Planning Policy (SEPP), Sustainable Buildings, 2022
- Sydney Local Environment Plan 2012
- Sydney Development Control Plan 2012

In response to the above, the ESD initiatives and commitments which have been implemented for the development include the following:

- Meeting the minimum legislated BASIX benchmarks:
 - **BASIX Energy 60%**
 - **BASIX Water 40%**
- Delivering a high level of thermal performance, demonstrated through a **7 star average and 6 Star minimum NatHERS rating** across the development
- Following a range of sustainability initiatives across the site spanning **energy efficiency, water efficiency, indoor environment quality, waste management and comfort**.

The strategies and initiatives presented in this report demonstrate a strong commitment to sustainability in line with the City of Sydney’s development guidelines and are to be further developed during subsequent stages of the project.



2 INTRODUCTION

2.1 PROJECT OVERVIEW

This Ecologically Sustainable Development (ESD) Report has been prepared by E-LAB Consulting on behalf of Time and Place Ltd (the Applicant) to accompany a Concept State Significant Development Application (SSDA) for a mixed-use development at 45-53 Macleay Street, Potts Point (the site).

The site is within the City of Sydney Local Government Area (LGA). It has an area of 1,289 sqm and is legally described as SP 934. The site currently accommodates a 12-storey residential flat building comprising 80 studio apartments, and associated car parking (refer Figure 1).

The site is in Potts Point, which is well serviced by public amenities such as a supermarket, cafes, destination retail shops and a library. Further afield is the Sydney CBD and the Royal Botanic Gardens to the west, and Elizabeth Bay and Rushcutters Bay to the east.

The site is within convenient walking distance (750 m) of Kings Cross Train Station which provides rail connections to Bondi Junction and South Sydney. It also benefits from access to local bus services along Macleay Street which run every 10 minutes on average throughout the day and connect the site with Potts Point, Central Station and Barangaroo.

Figure 1 below is an image of the site in context of its location.



Figure 1: Site Location (Source: Google Maps)

The project seeks concept approval pursuant to section 4.22 of the EP&A Act for a 13-storey mixed-use shop-top housing development comprising three levels of basement car parking, ground floor retail and residential above.

The project will include 15% affordable housing for a 15-year period to utilise the height and floor space bonuses in the Housing SEPP. The proposal will comply with the maximum height and FSR controls for the site when



utilising the bonuses provisioned for under the Housing SEPP for affordable housing provision, and the Sydney LEP 2012 for design excellence.

Table 1 Project Details

DESCRIPTOR	PROJECT DETAILS
Proposed Use	Shop Top Housing / Commercial Premises
Project Description	Construction of 13 storey mixed-use development comprising 3 levels of basement, ground floor retail and residential above.
Gross Floor Area	Maximum 5,529.8 sqm
Building Height	Maximum 50.05 m (inclusive of 30% affordable housing bonus and 10% design excellence bonus)
Floor Space Ratio	Maximum 4.29:1 (inclusive of 30% affordable housing bonus and 10% design excellence bonus)
Vehicle Access	Vehicle access to be provided off McDonald Street.

2.2 RESPONSE TO SEARS

This report has been prepared in response to the requirements contained within the Secretary’s Environmental Assessment Requirements (SEARs) issued for the SSDA (SSD-79316759). Specifically, this report has been prepared to respond to the SEARS requirement issued below.

Table 2 SEARs Compliance

ITEM	DESCRIPTION OF REQUIREMENT	SECTION REFERENCE
Ecologically Sustainable Developments	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 4
	Where relevant, provide an assessment of the development against the standards for non-residential development set out in Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022.	N/A

3 SUSTAINABILITY FRAMEWORKS

The 45-53 Macleay Street development's sustainability outcomes are influenced by the following key frameworks:

- Sydney Local Environment Plan 2012
- Sydney Development Control Plan 2012
- State Environmental Planning Policy (SEPP), Sustainable Buildings, 2022
- Building Sustainability Index (BASIX)

3.1 SYDNEY LOCAL ENVIRONMENT PLAN (LEP) 2012

The Sydney LEP 2012 Part 6.21 aims to deliver the highest standard of architectural, urban and landscape design. In accordance with this clause, the development must consider:

- Environmental impacts such as sustainable design, overshadowing and solar access
- The achievement of principles of ecologically sustainable development

3.2 SYDNEY DEVELOPMENT CONTROL PLAN (DCP) 2012

The Sydney DCP 2012 Section 3.6 outlines sustainability objectives that the development must consider, in particular:

- Reduction of greenhouse gas emissions
- Use of renewable and low carbon energy
- Minimisation of potable water use
- Consideration of climate change impacts
- Waste minimisation and recycling
- Improvement in indoor environment quality
- Consideration of sustainable materials
- Improvement in biodiversity

3.3 STATE ENVIRONMENTAL PLANNING POLICY (SEPP) SUSTAINABLE BUILDINGS 2022

Residential Development components of the project must adhere to Schedule 1 and Schedule 2 of the SEPP through demonstrating compliance with energy, thermal comfort, water and embodied emissions (materials index) reporting using the current NSW BASIX tool.

3.4 BUILDING SUSTAINABILITY INDEX (BASIX)

The Building Sustainability Index (BASIX) is a legislative requirement for all residential dwelling types within NSW. BASIX is the web-based planning tool designed to assess the potential performance of certain residential buildings against a range of sustainability indices including thermal comfort and energy. It sets water and greenhouse gas reduction targets relative to the NSW average benchmark for per person potable water consumption & greenhouse gas emissions within the residential sector. BASIX also sets the minimum performance levels for thermal comfort of the dwelling.



4 PROJECT DESIGN RESPONSE

4.1 EPA PRINCIPLES

The 45-53 Macleay Street development will follow the golden standard in sustainability principals throughout the development. This includes the design, construction and operational elements of the project. The principles of Ecologically Sustainable Development to which the development should generally adhere to are defined within Part 8, Division 5, clause 193 of the NSW EPA Regulation 2021 as.

*(2) **The Precautionary Principle** is that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*

*(3) In applying the **precautionary principle**, public and private decisions should be guided by—*

- (a) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
- (b) an assessment of the risk-weighted consequences of various options.*

Development Response: The project will employ proactive environmental protection measures and undertake risk assessments to ensure no irreversible environmental harm is acted as a result of the construction or operation of the development.

During construction, it is intended the main contractor will implement an independently certified Environmental Management System (EMS) that will demonstrate a formalised systematic and methodical approach to planning, implementing and auditing for environmental management. During operation, adherence to procedures that account for environmental risk and mitigation measures will be met.

*(4) **Inter-generational Equity** is that the present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*

Development Response: The project will ensure no irreversible environmental harm is acted as a result of the construction or operation of the development. The design team will address key elements such as energy, potable water and resource/material consumption to do all which is within the project's control to ensure future generations have equal opportunity and access to the environment.

*(5) **Conservation of Biological Diversity and Ecological Integrity** is that the conservation of biological diversity and ecological integrity should be a fundamental consideration.*

Development Response: The pre-developed site can be considered to have low-ecological value and biodiversity significance. The project is committed to planting native vegetation and using integrated landscaping to enhance the overall ecological and biodiversity of the site. Rainwater and stormwater will be carefully managed and controlled to minimise impacts on surroundings.

*(6) **Improved Valuation, Pricing and Incentive Mechanisms** is that environmental factors should be included in the valuation of assets and services, such as—*

- (a) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,*
- (b) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,*
- (c) established environmental goals should be pursued in the most cost-effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

Development Response: The project is committed to maximising construction and demolition waste diversion from landfill through the implementation of a well as project specific demolition and construction waste management strategy. The development shall ensure that the full life cycle impacts of goods and services



employed throughout the construction and operation of the project have been considered. Further, it will be designed to minimise operational energy and water consumption, which provides benefit for users through lower utility bills.

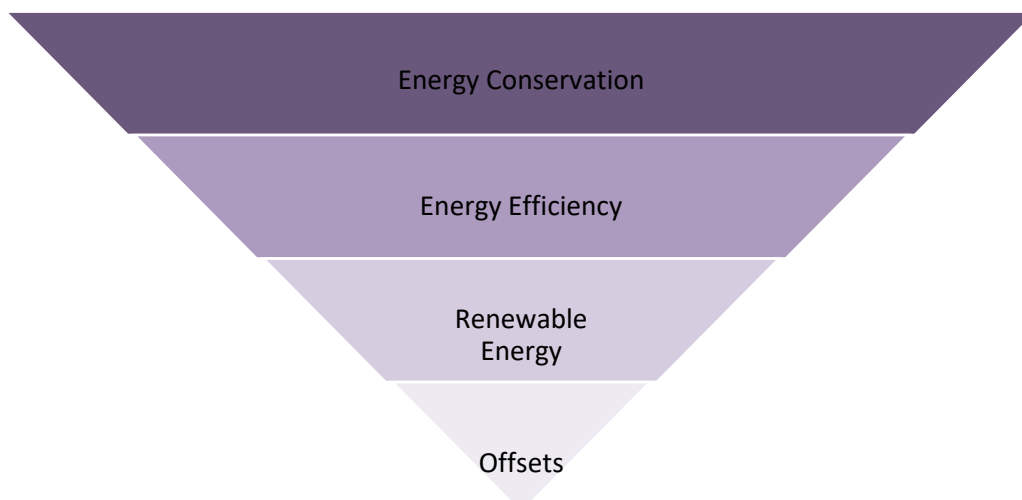
4.2 RESOURCES

The only path to a low carbon economy and achieving a “2°C world” where the average global temperature is kept to less than 2°C above pre-industrial levels is through comprehensive and complete consideration of how the development consumes resources. The strategy focusses on energy, water and materiality to ensure resource use is appropriate.



4.2.1 ENERGY




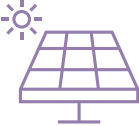

The energy efficiency strategy generally follows the energy efficiency pyramid of design below. In the first instance demand for Greenhouse Gasses should be reduced. Consideration should be to remove the need for energy to be consumed where possible. Beyond this, energy can be more efficient, through efficient lighting, mechanical systems and appropriate services.

Once the system has reduced all available energy-consuming elements and made the remaining systems as efficient as possible, renewable energy sources will be considered. If space allows on the roof, PV will be installed. Only after all of the above major steps have been completed should offsets be used to close the gap and achieve neutrality.





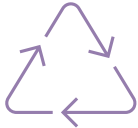
To achieve the above, the following initiatives are being explored:

	<p>BASIX Energy Target of 60% - The development is targeting an Energy target of 60% reduction compared to an equivalent development. This target will be achieved through the measures outlined below.</p>
	<p>Thermally-Efficient Construction – Insulation through the roof, walls and floor, with proper sealing to reduce bulk airflow. Light-coloured materials will be used to reflect solar heat gains. Delicate consideration will be given to the height of the windows, shading and overall window-to-wall ratio. The project is targeting an aspirational 7 Star NatHERS average rating across the development to provide occupants with great thermal comfort outcomes.</p>

	<p>Efficient Mechanical systems – heating and cooling will be provided via individual systems for each apartment with day/night zoning.</p>
	<p>Energy Efficient Appliances – premium energy efficient appliances such as dishwashers, dryers, washing machines and fridge’s will be provided to reduce operational energy consumption.</p>
	<p>Efficient Lighting Systems – high efficiency LED and fluorescent lighting in common areas with efficiency controls to meet the stringent requirements of NCC 2019 Section J. Controls will include motion sensors, time clocks and zoned switching.</p>
	<p>Renewable Energy – The roof area provides a good opportunity for installation of a solar photovoltaic system. This will generate renewable electricity to offset grid use and minimise stress on the grid at peak times. The size of the system will be further developed, taking into consideration roof design, spatial allowance and building demand.</p>
	<p>Energy metering and monitoring – energy meters and monitoring systems will be provided to comply with NCC 2019 Section J Part J8 requirements.</p>

4.2.2 WATER CONSUMPTION

The project will target a **BASIX Water target of 40%**. To achieve responsible water consumption, best practice water-saving initiatives will need to be implemented throughout the project. The following initiatives will be explored to achieve the potable water targets:

<p>Sanitary Fixtures - By implementing low-flow water fixtures, the consumption associated with apartments will be significantly reduced. All sanitary fixtures are to be provided to the WELS ratings identified below:</p> <ul style="list-style-type: none"> ▪ Taps – 6 Star WELS ▪ Toilet – 4 Star WELS ▪ Showers– 3 Star WELS (<7.5 L/min) ▪ Appliances to be high WELS rated where supplied 	
<p>Landscape Irrigation - Efficient irrigation systems will be considered, including underground surface drip systems, moisture sensors, and the use of native plants in the landscaping plan. Natives have evolved to thrive in the Australian environment and are typically more resilient than their exotic counterparts.</p>	
<p>Fire test water – fire test water will be contained in a closed loop system to reduce potable water wastage.</p>	



Swimming pools – a common area swimming pool will be provided, carefully sized to balance amenity for residents and control potable water consumption.



4.2.3 MATERIALS

In line with the principals of sustainability outlined in the EPA, the project will have a significant focus on materiality. The scope of consideration includes the following action items within the project response:

- **Construction Waste** – A minimum 90% diversion from landfill target during demolition and construction. This diverts and ensure reuse or recycling of a high portion of site waste.
- **Low VOC and Low Formaldehyde Materials** – paints, adhesives, sealants, floor coverings, carpets and engineered wood will be selected appropriately to provide a healthier and low-impact environment. Such efforts provide a cleaner and better environment for all.
- **Best-Practice PVC** – cables, pipes, flooring and blinds will be selected and specified to be Best Practice PVC. This ensures upstream performance will be met and has significant benefit for the overall environment during the construction process.
- **Best Practice Steel** – Where possible, steel will come from a sustainable steel manufacturer, who has an action plan.
- **FSC/PeFC Timber throughout** – where possible, timber, including virgin and engineered timber through construction and fitout elements under the builder’s control will be specified as FSC/PeFC. This ensures the timber provided to site is of the highest standard and sourced from sustainable sources.
- **Waste Management Plan** – Development of an ongoing Waste Management Plan so waste can be sorted, separated and recycled. This will assist ongoing diversion from landfill for the development.

4.3 COMFORT AND QUALITY

To ensure the best quality for users and visitors inside the space, the following key initiatives will be committed to:

- **Visual Comfort** – Maximising high-quality light into the living spaces, with views to the sky and nature where possible. The development has sweeping uninterrupted views to the harbour.
- **Acoustic Excellence** – Designing the layouts of the apartments to be protected from noise from external sources. Delicate material selection, acoustic attenuation and designing the shape of the building and openings accordingly achieves the performance. Further, separation of spaces ensures acoustic privacy between dwellings.
- **Thermal Comfort** – Appropriate mix of vernacular design, overhangs, high-performance windows and mechanical systems to deliver the users optimised thermal
- **Lighting Comfort** – Use of high colour rendering index (CRI > 80) LED lighting throughout the entire development. Low-glare lighting with baffles or louvres to limit UGR.
- **Generous natural planting** – Greenery through natural planting throughout the development assists in a connection to nature for users and passersby. It also has a cooling effect, reducing the Urban Heat Island Burdon on the project.

The above combine to ensure the development as a whole is responsible, efficient, beautiful and in the best interest of not just the developers, but the residents, the community and society as a whole.



5 CONCLUSION

This report provides an outline of the 45-53 Macleay Street's ESD initiatives to be considered for the development to demonstrate Design Excellence.

The ESD strategies proposed will assist the development to achieve high levels of sustainability and environmental performance. These targets include:

- Meeting the minimum legislated BASIX benchmarks:
 - **BASIX Energy 60%**
 - **BASIX Water 40%**
- Delivering a high level of thermal performance, demonstrated through a **7 star average and 6 Star minimum NatHERS rating** across the development
- Following a range of sustainability initiatives across the site spanning **energy efficiency, water efficiency, indoor environment quality, waste management and comfort**.

The strategies and initiatives presented in this report demonstrate a strong commitment to sustainability which meet and exceed expectations for the development. Further opportunities for optimisation of the building's performance will be developed during subsequent stages of the project.



