



# Coffs Harbour, Affordable Housing State Significant Development – SSD-83294209

Ecological Sustainable Development Report

Prepared for: Homes NSW

**Project No:** SYD3635  
**Date:** 9 September 2025  
**Revision:** 04



**Project:** Coffs Harbour, Affordable Housing State Significant Development – SSD-83294209

**Location:** 211A-215 Harbour Drive  
Coffs Harbour, NSW 2450

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# 1. Introduction

## 1.1 Project Overview

This ESD Opportunities Report has been prepared by ADP Consulting on behalf of Homes NSW for construction of a 4-storey residential flat building for the purposes of affordable housing at 211A-215 Harbour Drive, Coffs Harbour NSW 2450.

The purpose of this ESD Opportunities Report is to provide a list of Environmentally Sustainable Design (ESD) initiatives and recommendations to be considered for the proposed development. The report also addresses the Secretary's Environmental Assessment Requirements (SEARs) – Housing (issued 2 May 2025) for the project, with the specific requirements of Requirement 15: Ecologically Sustainable Development (ESD):

- > Identify how ESD principles (as defined in section 193 of the EP&A Regulation and Section 1.4.1.2) are incorporated in the design and ongoing operation of the development.
- > 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*.

With regards to the SEARs requirements, Chapter 3 of Sustainable Buildings SEPP does not apply as the proposed development it is entirely residential and does not include any non-residential development. As such, the requirements below are not applicable for this project:

- > NABERS embodied Emissions Materials Form
- > Net Zero Statement
- > NABERS Agreement(s) to Rate, or Commitment Agreement(s) to energy and water use

Following a review of the project brief, site location and architectural drawings, we propose the following areas of sustainability to be explored during the design, construction, and operation of the proposed development:

- > Energy & Greenhouse Gas Emissions
- > Water Efficiency & Conservation
- > Low Carbon Materials
- > Waste Management Practice
- > Healthy Indoor Environment Quality
- > Recommended Social Initiatives
- > Sustainable Transport
- > Sustainable Management Practices
- > Biodiversity
- > Net Zero Operational Carbon Emissions
- > Operational Carbon Emissions

## 1.2 The Site

The site is located at 211A-215 Harbour Drive, Coffs Harbour. It is in the City of Coffs Harbour Local Government Area (LGA) and is zoned R3 Medium Density Residential under the Coffs Harbour Local Environmental Plan (LEP) 2013.

The project site is an extant greenfield site with a total site area of 3,807sqm and has two street frontages: Harbour Drive to the South, and North Street to the East. Refer to Figure 1. A bus stop is located immediately in front of the site along Harbour Drive providing a loop service throughout Coffs Harbour.

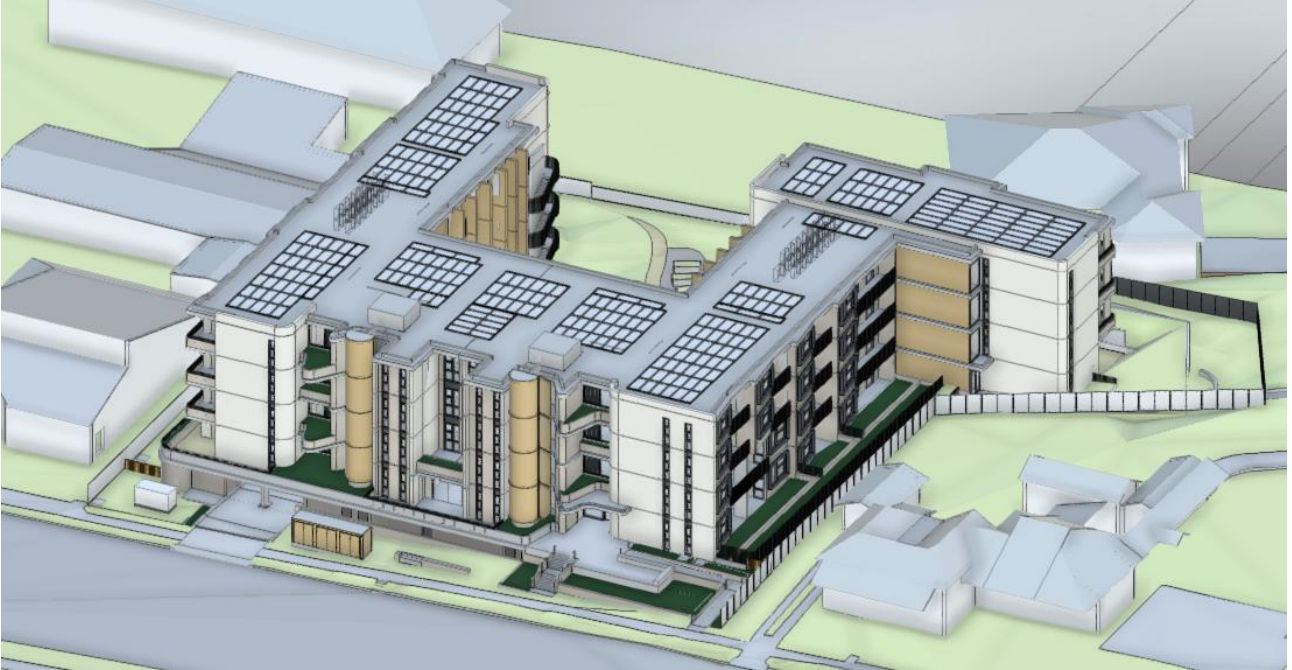
Figure 1 Proposed Development Site: 211A-215 Harbour Drive



### 1.3 The Proposed Development

The proposed development involves the construction of a new 4-story residential flat building to accommodate 60 residential units (Class 2). There will be a community spaces for residents on the ground level. The building also includes 1 lower ground level with 31 car spaces for car parking, along with designated spaces for resident bicycles and EV bike parking. The proposed development will serve as affordable housing.

Figure 2 3D render of proposed building



## 1.4 Relevant Policies and Guidelines

### 1.4.1 National and State-wide guidelines

The following national and state-wide policies are applicable to this project:

- > Sustainable Buildings State Environmental Planning Policy (SEPP) 2022 - NSW Department of Planning
- > Planning Secretary's Environmental Assessment Requirements (SEARS)
- > Section J provisions of the NCC 2022 Building (BCA) Code of Australia

The Sustainable Buildings SEPP 2022 is the main driver behind mandatory ESD design initiatives (BASIX), while SEARS provides guiding principles ESD opportunity reports must answer to.

#### 1.4.1.1 Sustainable Buildings SEPP 2022

The Sustainable Buildings SEPP 2022 is a state-wide environmental planning policy that sets minimum sustainability requirements for residential and certain non-residential development with the aim of reducing greenhouse gas emissions in line with the NSW Net Zero Plan.

BASIX requirements are assumed to be met automatically as a compliant BASIX certificate is mandated for SSDA. For more details on how these requirements are met please refer to the BASIX report, a separate piece of work that will accompany this ESD Opportunities report at SSDA stage.

For this development, the below minimum BASIX targets must be achieved, as defined by the State of NSW under the SEPP.

- > 40% improvement in Water consumption
- > 61% Improvement in Energy consumption
- > All units to 'pass' the minimum thermal performance requirements for heating and cooling (as defined by the development's climate zone)
- > Only the construction material specifications and volumes are required to be reported under BASIX Material reporting—there is no compliance target that needs to be achieved.

The minimum targets required for water and energy (40% and 61% respectively) represent a percentage saving and improvement for the development when compared to that of an average benchmark development for NSW.

#### 1.4.1.2 SEARS Ecologically Sustainable Development (ESD) Principles

This ESD Opportunities Report addresses the Secretary's Environmental Assessment Requirements (SEARS) through the State Environmental Planning Policy (Sustainable Buildings) 2022.

The SEARS requirement refers to section 193 of the EP&A Regulation (Environmental Planning and Assessment Regulation) which provides the following principles of a "ecologically sustainable development", as follows.

##### 1.4.1.2.1 The precautionary principle

*Namely, 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. In the application of the precautionary principle, public and private decisions should be guided by:*

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

The project will ensure appropriate due diligence will continue to be conducted alongside the development process to ensure the above is satisfied. Consideration around the local environmental impact is outlined specifically with regard to:

- > Water efficiency and conservation in Section 2.5,
- > Waste management in Section 2.7,
- > Local community impacts in Sections 2.8 and 2.10,
- > Embodied carbon in Section 2.5.

#### 1.4.1.2.2 *Inter-generational equity*

*Namely, that the present generation should ensure that the health, diversity, and productivity of the environment are maintained or enhanced for the benefit of future generations.*

The project will ensure a long-term design vision which considers long term impacts to the environment, with the goal to enhance the surroundings for the ongoing benefit of the community. Please refer to Sections 2.8-2.10.

#### 1.4.1.2.3 *Conservation of biological diversity and ecological integrity*

*Namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration.*

The project will be designed to conserve and potentially enhance the local biological diversity and ecological integrity, design to maximise landscaping space, retain and preserve though the construction process, where possible, existing habitat. Further consideration on this item is outlined in Sections 2.9.

#### 1.4.1.2.4 *Improved valuation, pricing, and incentive mechanisms*

*Namely, that environmental factors should be included in the valuation of assets and services, such as:*

- **(i)** *polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance, or abatement,*
- **(ii)** *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,*
- **(iii)** *environmental goals, having been established, 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.*

The project aims to reduce operation consumption as well as implement a waste management plan in line with sustainability goals, see Section 2.6 thereby abating pollution generation and/or waste generation from the development.

The project will consider Life cycle when making decisions around materials and the waste process, see Sections 2.3 and 2.5

Environmental sustainability goals will be established based on the net zero ambitions of Homes NSW (Sections 2.3 and 2.5).

## 1.4.2 Local and Project-specific Guidelines








The following guidelines were used to guide the development of project-specific ESD opportunities and recommendations:






- > Sustainable Buildings State Environmental Planning Policy (SEPP) 2022 - NSW Department of Planning
- > NSW Land and Housing Corporation (LAHC) Design Requirements
- > NSW Government Good Design for Social Housing (2020)
- > Coffs Harbour City Council Development Control Plan (DCP) 2015
- > Coffs Harbour City Council Local Environmental Plan (LEP) 2013








These form project-specific controls and recommended design initiatives that will guide the proposed development to reach the most sustainable outcome and contribute to a positive public domain. The sustainability targets and objectives are derived from the above frameworks.

### 1.4.2.1 Sustainability Targets & Objectives

The primary objective of the development is to create a positive impact on the surrounding environment and community through its design, in line with the sustainability ambitions of Homes NSW and Coffs Harbour City Council. The following key targets have been identified for the project as below:

<b>Legend</b>							
	Energy	Water	Ecology and Biodiversity	Community	Indoor Environment Quality	Waste	Transport

Development Policy/Guideline	Category	Targets	Design Response
<b>NSW Land and Housing Corporation (LAHC) Design Requirements</b>		Implement passive design principles Net zero: Optimise roof design for solar panels; aim for net zero homes; prioritise an all-electric building design. NatHERS and BASIX: An average 7-star rating or above across the whole building. Demonstrate compliance to BASIX for the built form.	Section 2.3
		Indoor environment quality: Prioritise products with low VOC and allergenic content, as well as high recycled content. Optimise natural ventilation. Apply ADG minimum solar access standards for all dwellings. Avoid any dwellings receiving less than 15 minutes of solar access to living areas and private open space.	Section 2.5, 2.7
		Waste: Provide waste facilities in accordance with local council requirements. Allow for source separation of waste from recycling, including organic waste.	Section 2.6
		Landscaping: Preference to endemic native species, low maintenance and drought-tolerant plant species.	Section 2.9
		Universal design: Apply Liveable Housing Design Guidelines (Silver Level) to all new LAHC dwellings.	Section 2.10

Development Policy/Guideline	Category	Targets	Design Response
<b>NSW Government Good Design for Social Housing (2020)</b>		The design of social housing should support physical and mental health of the tenants, and is flexible to adapt to future requirements.	Section 2.6
		Social housing should have low running costs. Design efficiencies should be utilised to generate cost savings.	Section 2.3, 2.4
		Housing should provide welcoming and safe public spaces and common areas that support social interaction. The high quality of housing should be indistinguishable from private housing, providing tenants a sense of pride and to care of their home.	Section 2.3 and 2.6
<b>Sustainable Buildings SEPP 2022 (BASIX requirements)</b>		61% energy savings compared to standard benchmark. The project will adhere to the higher threshold requirements of NSW SEPP, thus exceeding the BASIX threshold. Construction material specification and volumes must be reported only – no targets need to be achieved.	Section, 2.3, 2.6
		40% water savings compared to standard benchmark	Section 2.4
		Thermal Comfort: Heating & cooling loads to not exceed thresholds stated for NatHERS Climate Zone 56, as specified in the NSW SEPP	Section, 2.3, 2.5
<b>Coffs Harbour City Council DCP Design Controls</b>		Dignified, equitable, cost-effective and reasonably achievable access to buildings, and facilities and services within buildings, is provided for all people (Disability (Access to Premises – Building Standards) 2010).	Section 2.3

## 2. Environmentally Sustainable Design (ESD) Opportunities

### 2.1 General

This section outlines Environmentally Sustainable Design (ESD) design measures, in line with requirements outlined in the introduction, including additional opportunities that are to be considered during the detailed design stage of the project to support these ambitions and targets.

Initiatives below will address external drivers such as the guiding principles of the SEARs and Sustainable Buildings SEPP, as well as the internal sustainability ambitions of Homes NSW and Coffs Harbour City Council.

Following a review of these requirements, site location and architectural drawings, we propose the following areas of sustainability to be explored during the design, construction, and operation of the proposed development:

- > Energy & Greenhouse Gas Emissions
- > Water Efficiency & Conservation
- > Low Carbon Materials
- > Waste Management Practice
- > Healthy Indoor Environment Quality
- > Recommended Social Initiatives
- > Sustainable Transport
- > Sustainable Management Practices
- > Biodiversity
- > Net Zero Operational Carbon Emissions

## 2.2 Energy efficiency and Compliance

The proposed building will be designed complying to BASIX standards (which is aligned with and complement the NCC 2022), as follows:

- > All residential units to meet thermal performance as:
  - Not exceed the maximum heating and cooling caps for individual apartments as identified in the NSW Sustainable Buildings SEPP

## 2.3 Energy & Greenhouse Gas Emissions Reduction

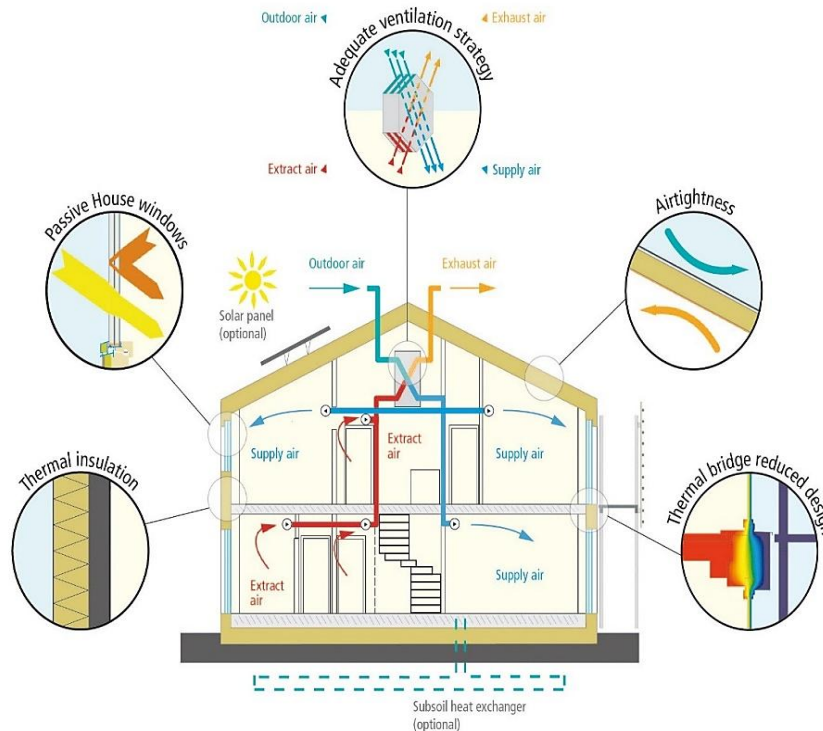
The project team can explore opportunities to reduce the buildings greenhouse gas emissions impact, through the development of energy saving or energy generating design measures. The following section discusses design aspects of the building that are focused on energy efficiency in operation.

### 2.3.1 Building Fabric Design

Building fabric design impacts the ability of the building to maintain temperature, air quality and improve interior visibility. Ways the project can aim to do this are as follows:

- > Building orientation and form to be optimized for passive design
  - Passive cooling in the summer
  - Passive heating in the winter.
  - Optimisation of window to wall ratios to all facades of the residential areas.
- > Efficient glazing systems:
  - Provision of high-performing window systems to help reduce heat loss in winter and heat gain in summer.
  - The provision of glazing with a low solar heat gain coefficient to reduce unwanted heat gain from the morning (east) and evening (west) sun, optimising the thermal comfort levels and reducing the energy required to cool the space.
  - Glazing selections that allow for high levels of Visual Light Transmission (VLT) to allow for useful daylight levels of daylight throughout the day.
- > Provision of high levels of insulation to the external walls, roof, and exposed floors that form part of the building envelope.

Figure 3 Passive design strategies for dwellings. Source: Passive House Institute



### 2.3.2 Heating, Ventilation, & Air Conditioning (HVAC) Design

The HVAC design affects mainly the ongoing energy use and air quality of the building, the below items outline how the project can aim to make the HVAC system more efficient.

- > Allow for operable windows for apartments and other spaces that are occupied by people to reduce the need for mechanical ventilation and air conditioning. Install ceiling fans in residential apartments, helping to offset/supplement AC system usage and improve ventilation.
- > Select high-efficiency HVAC systems for conditioned spaces:
  - Individual heating and cooling systems (1-phase air-conditioning) with an EER/COP of 3.0-3.5

### 2.3.3 Lighting Design

Along with HVAC design, lighting design is a constant energy draw within a building. Ensuring the underlying design has considered efficiency is important for the ongoing operational costs of the project, the initiatives below can be implemented in the design phase:

- > Building orientation and form to be optimized for passive design (cooling in the summer and passive heating in the winter) and natural lighting. Reduce the need for artificial lighting by introducing sunlight through sufficiently size glazed windows and clerestory windows where applicable.
- > Select high-efficiency LED lights to provide adequate lighting levels and colour rendering with minimal energy expenditure.
- > Consider impacts such as maintenance costs and access for easy maintenance in practice may also be considered.

- > Lighting controls are customised to occupancy patterns:
  - Carpark: LEDs – Daylight and Motion Sensor, lighting control
  - Lift cars: LEDs connected to the lift call buttons. Shutdown of non-essential lighting, screens, etc. when on standby; and
  - Plant rooms and switch rooms, LEDs – Manual on / Manual off
  - Garbage room, LEDs – motion sensors, lighting control
  - Hallways, lobbies and corridors, LEDs – Motion Sensors, lighting control
  - Social and Affordable Entry Lobbies – LEDs, Time Clock and Motion Sensors, lighting control
  - Communal space – LEDs - Motion Sensors, lighting control

### **2.3.4 Domestic Hot Water**

Domestic hot water is an area that affects both energy usage as well as water usage. Given the project already has provision for a 120kW roof PV system, the below initiatives can be considered:

- > Provide a high-efficiency electric instantaneous hot water system to each dwelling to take advantage of carbon-neutral PV energy
- > Insulate pipes to reduce heat loss as the hot water is distributed, ensuring less energy for heating water is required.

### **2.3.5 Facilities**

To reduce the energy consumption and corresponding greenhouse gas emissions, the project can be designed to be all-electric with the initiatives below:

- > All apartments are provided with a screened clothesline on the balcony, allowing residents to dry clothes without using a dryer.
- > Induction cooktops and electric ovens

### **2.3.6 Onsite Renewables**

On-site solar photovoltaic (PV) generation will be explored to enable greater reductions in greenhouse gas emissions, reduce the demand from the electricity grid, and to offset associated operational greenhouse emissions. The project can consider:

- > Photovoltaic (PV) cells and system to be installed on the roof. The current provision is for a 120 kW peak array system.
- > Consider a combination of different options, layouts, and orientations to optimise performance whilst considering the constrained space, orientation, maintenance, and aesthetics of the project.

Figure 4 Example of rooftop solar installation



### 2.3.7 Metering & Monitoring

An important aspect for any new development, metering, and monitoring allow building owners to measure and quantify operational efficiency metrics, as well as a feedback mechanism on sustainability initiatives. The project can consider:

- > Energy and water monitoring at the distribution level to identify main consumption factors and any building components that are associated with leakage/wastage.
- > The metering strategy will aim to monitor the following major systems:
  - Incoming electrical and water mains supply
  - Electrical supply and thermal meters to distinct areas and uses
  - Metering for energy and water for individual dwelling units
  - Common area lighting systems

## 2.4 Water Efficiency & Conservation

The project can explore opportunities to reduce water consumption and optimise reuse.

- > To reduce potable water use, the project considers installing highly efficient WELS rated fittings and fixtures, and appliances.

Table 1 Recommended WELS rating

Water fixture/fitting/appliance	Minimum WELS rating
Taps	5 Star
Toilets	4 Star
Showers	5 Star (> 4.5 but <= 6.0 L/ min)
Dishwasher	5 Star
Clothes washing machine	4 Star

Note Homes NSW is not providing dishwashers and clothes washing machines to any dwellings for this project, it is the responsibility of the end user to provide appliances at their discretion.

## 2.5 Materials

The project can consider reducing its environmental impacts through the following responsible materials initiatives:

- > Design the building and consider construction methodologies for optimum reuse and recyclability of building components.
- > Select materials for low-maintenance and long life to minimise compounding material impacts through repairs and refurbishments over the building's lifetime.
- > Ensure the buildings structure, envelope, systems, and finishes are comprised of responsibly sourced products.
- > Optimise design for most efficient use of materials to lower upfront carbon impacts.

## 2.6 Waste Management Practice

The project should develop waste management strategies that prioritise avoiding or reducing waste production and providing options to divert waste from landfill as shown in the waste hierarchy below:

Figure 5 Waste Hierarchy – prioritising strategies from the top of the pyramid.



The project should be supported by two waste management plans developed with best practice guidelines, as follows:

- > A Construction & Demolition Waste Management Plan to reduce the total amount of waste being sent to landfill when compared against a typical building of its type.
- > An Operational Waste Management Plan to reduce operational/occupancy waste, including:
  - Identifying the waste streams relevant to the different operational components of the building, and the individual roles responsible for implementation.
  - Methods for encouraging the separation of waste streams, such as bins, storage areas, or recycling facilities in public areas as required.
  - Identifying storage areas for all waste streams and outline best practice safety and access requirements for their collection.
  - Identifying safe methods for vehicle access and transfer of waste.

## 2.7 Healthy Indoor Environmental Quality

The project team will consider design initiatives that support the provision of a healthy, activated, and comfortable indoor environments that focus on improving the health and wellbeing of its occupants many of these are related to consideration around HVAC and building fabric design. The design can explore:

- > Façade configurations that provide optimal levels of natural daylight
- > Glazing selections that allow for high levels of Visual Light Transmission (VLT), flooding spaces with useful daylight levels throughout the day
- > Glare mitigation measures through optimising the design for fixed or operable shading devices (including blinds) appropriate to the space.
- > Responsible material selections will be considered to minimise exposure to harmful indoor pollutants such as Volatile Organic Compounds (VOC's), formaldehyde from engineered wood and PVC.

## 2.8 Recommended Social Initiatives

As part of an ongoing sustainability vision, it is important to also consider social sustainability initiatives. Initiatives that can be embedded into the project are:

- > Engagement with Traditional Custodians to consider Designing with Country and possible interpretation sites within the project
- > Responsible and inclusive contractors, with understood and ethical supply chains – e.g., responsible procurement and modern slavery requirements.
- > Implement universal design principles for a diverse range of users and abilities, adhering to Livable Housing Design Guidelines
- > Provision of a communal room, and a landscaped communal outdoor space to develop community within the proposed development and provide services and programs for tenants.

## 2.9 Biodiversity

At a minimum, the project must comply to the Coffs Harbour City Council Local Environment Plan (LEP) 2021 and the Coffs Harbour City Council Development Control Plan (DCP). Recommendations for this project include:

- > Preference given to native or adaptive flora species for this bioregion in landscape design, deepening connection to the natural heritage of the site.
- > A Construction Environmental Management Plan to minimise impacts to the existing neighbouring trees, erosion and sedimentation caused by construction activities, disposal and management of toxic waste e.g. paints and solvents.
- > Consideration for biodiversity to be aligned with Water Sensitive Urban Design strategies (for rain- and stormwater management) and Urban Heat Island mitigation (for reducing local heat stresses and shocks).
- > Include tree planting and other planting that enhances opportunities for play and learning while creating attractive outdoor landscape

## 2.10 Sustainable Transport

The project is located in a well-connected, walkable neighbourhood with several amenities nearby. For example, it is only roughly a 200-metre walk to the nearest supermarket and local centre. Given the proximity to community amenities, the proposed development can be designed for low carbon transport, such as active transport and the uptake of electric vehicles (EVs). The project design can incorporate:

- > Electric vehicle infrastructure:
  - Provision for EV car charging in accordance with the requirements of the NCC
- > Infrastructure for micromobility: Spaces for electric bicycle charging which can also be used for mobility scooters.
- > Secure bicycle storage/parking for the building occupants and visitors: Bicycle lockers distributed throughout the residential levels. These can be utilised for storage if not required for bicycles.
- > Accessible parking spaces for tenants with mobility impairments.

## 2.11 Sustainable Management Practices

The project team has considered initiatives to deliver best practice environmental management across the design and construction of the project. The design team can explore:

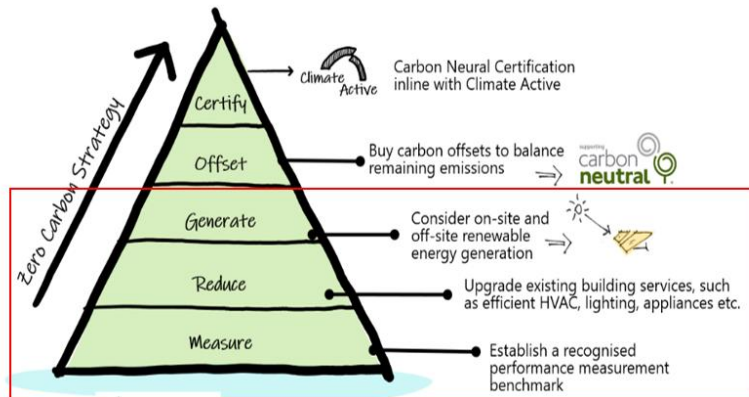
- > Opportunities to set environmental targets, such as energy, water, waste, or indoor environmental quality.
- > Development of a best practice Construction Environmental Management Plan (CEMP) for the demolition and construction phases of the project.
- > Design and implementation of Crime Prevention Through Environmental Design (CPTED) principles to increase the safety of occupants and visitors.

## 2.12 Net Zero Operational Carbon Emissions

In line with the NSW Net Zero Plan by 2050, the project has the opportunity to reduce its greenhouse gas emissions generated by its operational energy use. The following strategy has been proposed as a pathway for the development to achieve net zero:

- > **Measure:** At a minimum, annual review of the building monitoring system and services efficiencies.
- > **Reduce:** ESD initiatives explored in Section 2 – reduce operational energy and water consumption, encourage behaviour changes to reduce operational waste
- > **Generate:** ESD initiatives explored in Section 2.3.6, generating energy on-site will decarbonise the project and supply carbon-neutral electricity in the long-term.
- > **Offset:** *Future Consideration*
- > **Certify:** *Future Consideration*

Figure 6 Net-zero Pathway – the biggest impacts are in the bottom three rungs



## 2.13 Conclusion

This ESD Opportunities Report provides a list of Environmentally Sustainable Design (ESD) initiatives and recommendations to be considered for the proposed development. The report also addresses the Secretary's Environmental Assessment Requirements (SEARs) – Housing (issued 2 May 2025) for the project, and identifies how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development:

1. The precautionary principle (Section 2.3, 2.5, 2.7, 2.10)
2. Inter-generational equity (Section 2.3, 2.8 – 2.10)
3. Conservation of biological diversity and ecological integrity (Section 2.9)
4. Improved valuation, pricing, and incentive mechanisms (Section 2.3 - 2.5)

Energy & greenhouse gas emission reduction measures listed (refer to section 2.3) would directly lower long-term emissions. These measures also improve thermal comfort, reduce utility bills for tenants, and align with the Homes NSW (and Government's) net-zero by 2050 goal.

Remaining initiatives (Refer to section 2.4-2.12) highlight an array of sustainable practices that make Harbour Drive, Coffs Harbour more accessible, comfortable, social, as well as reducing the carbon and waste footprint of the building. The initiatives listed all coincide to create higher-quality affordable living spaces, aligning with the Coffs Harbour DCP, NSW LAHC Design Requirements and the principles of Good Design for Social Housing (2020).

The recommended ESD initiatives should be integrated into design as early as possible so the maximum potential benefit from these design choices can be captured.