

TriCare Hastings Point

Environmentally Sustainable Design (ESD)

in response to Planning Secretary's Environmental Assessment Requirements (SEARS)

Prepared for: TriCare (Hastings) Limited

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Location:	87-89 Tweed Coast Road, Hastings Point NSW 2489
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Executive Summary

This report has been prepared for TriCare (Hastings) Limited and provides a list of Environmentally Sustainable Design (ESD) initiatives & recommendations responding to Planning Secretary's Environmental Assessment Requirements (SEARS) for the proposed development, TriCare Hastings Point, to be located at 87-89 Tweed Coast Road, Hastings Point NSW 2489.

Based on a detailed review of the project brief, site context, and current architectural documentation, this report identifies specific sustainability measures to be implemented or committed to across the design, construction, and operational phases of the development. These measures are aimed at exceeding minimum compliance requirements (including those mandated under BASIX and the National Construction Code) and delivering demonstrable ESD outcomes across the following areas:

- > National Construction Code (NCC) 2022
- > Energy & Greenhouse Gas Emissions
- > Water Efficiency and Conservation
- > Sustainable Transport Options
- > Best Practice Waste Management
- > Healthy Indoor Environmental Quality (IEQ)

The reports concludes that the proposed development will meet the SEARS conditions through proposed ESD opportunities. Summary of the responses are provided:

Table 1 Summary of SEARS Conditions and Responses

SEARS Conditions	ESD Responses
Identify how ESD principles (as defined section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development.	– Ecological assessment of the site – Landscape Design – On-site energy generation PV Refer to Sections 2 and 3 for further details
Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.	– BASIX and NCC 2022 compliance – Energy Efficient HVAC and lighting – High performance façade – On-site energy generation PV – Water Conservation – Waste Management Refer to Sections 2 and 3 for further details
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.	– BASIX and NCC 2022 compliance – Energy conservation through energy efficient HVAC and lighting – Regenerative energy by PV Solar Panels – Water conservation – Low embodied carbon materials Refer to Sections 2 and 3 for further details

1. Introduction

1.1 Project Overview

This report has been prepared for TriCare (Hastings) Limited and outlines a suite of targeted Environmentally Sustainable Design (ESD) initiatives and recommendations in response to the Planning Secretary's Environmental Assessment Requirements (SEARs) for the proposed TriCare Hastings Point development at 87-89 Tweed Coast Road, Hastings Point NSW 2489.

Informed by the project brief, site characteristics and architectural documentation, this report identifies clear sustainability actions that will be incorporated throughout the design, construction, and operational stages of the development. The proposed strategy goes beyond minimum compliance to deliver improved environmental performance across the following key focus areas:

- > National Construction Code (NCC) 2022
- > Sustainable Transport Options
- > Energy & Greenhouse Gas Emissions
- > Best Practice Waste Management
- > Water Efficiency and Conservation
- > Green Building Certification

This document supports the Development Application (DA) submission to the NSW Department of Planning, Housing and Infrastructure, demonstrating how the project aligns with the SEARs and reflects TriCare's commitment to responsible and sustainable development.

1.2 Project Background

TriCare Hastings Point, 87-89 Tweed Coast Road, Hastings Point NSW 2489 is proposed to in Tweed Shire local government area and situated to the east of Cudgera Creek and to the west of the Tweed Coast Road.

Figure 1: Proposed Development Site and View: TriCare Hastings Point, 87-89 Tweed Coast Road, Hastings Point NSW 2489



The proposed development is to be located within climate Zone 2 (warm humid summer, mild winter), as identified by the Australian Building Codes Board (ABCB) and consists of the following NCC Classification Types under Table 2.

The TriCare Hastings Point development comprises both independent living units (ILUs) and a residential aged care home (RAC) home, that will be supported by a range of other services. The proposal includes:

- > A 47 place RAC (Building D) comprising:
 - Individual private rooms with ensuites facilities
 - shared dining, lounge and sitting rooms
 - café
 - kitchen
 - serveries
 - nurse’s stations
 - offices
 - staff room and facilities
 - waste room
 - loading bay
- > 51 ILUs split across 3 buildings, including:
 - 24 ILUs in Building E
 - 18 ILUs in Building F
 - 9 ILUs in Building G.

Complimenting the ILUs and RAC, the development offers a range of communal facilities for entertainment, health, active and passive recreation. These facilities include:

- > Bowling Green and pavilion with bowls store, amenities, kitchen and covered seating area
- > Indoor swimming pool and spa, with amenities and viewing area
- > Perimeter walking trail; and
- > Landscaped gardens.

The proposed development will provide an important contribution to supporting the need for seniors’ accommodation and care within the locality.

No changes to the existing Stage 1 development are proposed.

Table 2 NCC Classifications

Level	Usage	NCC Class
Basement Level 1	Carpark	7a
Buildings E, F, and G	Residential ILU	2
Building D Ground	Aged Care Facility	9c

1.3 Relevant Policies & Guidelines

The following Planning Policies and Guides have been referenced as part of the projects Environmentally Sustainable Design (ESD) approach:

- > National Construction Code (NCC)/Building Code of Australia 2022
- > Planning Secretary's Environmental Assessment Requirements (SEARs)
- > State Environmental Planning Policy (SEPP) Sustainable Buildings 2022
- > Tweed Development Control Plan (DCP) 2008
- > Tweed Local Environmental Plan (LEP) 2014
- > Tweed Shire Council - Climate Change Management Policy
- > Tweed Shire Council – Towards Zero Carbon Policy

1.4 Documentation

The following documentation has been used to inform this report:

- > Architectural Drawings by Arqus Design dated 09 October 2024

1.1 Sustainability Compliance Targets & Objectives

The vision for TriCare Hastings Point is to create a development that contributes positively to the community through high-performance, climate-responsive design that is both culturally sensitive and ecologically restorative. The following sections will review the sustainability targets of TriCare Hastings Point:

1.1.1 SEARS Targets

Projects that have been identified as State Significant Development (SSD) are applied particular requirements by the NSW State Government. These requirements are established to minimise the project impact on the environment and ensure the design addresses any risks due to development.

The following requirements are stipulated by the Planning Secretary in the assessment of the SSDA:

- > Identify how ESD principles (as defined section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development.
- > Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.
- > 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.

This report presents actionable initiatives aligned with these objectives and tailored to the project's site and function.

1.1.2 Section J Compliance: Energy Efficiency

The building will be designed to fully comply with NCC 2022 Section J Energy Efficiency provisions. Commitments include:

- > Use of high-performance glazing and external shading to reduce thermal loads.
- > Integration of high-efficiency HVAC systems with zoning and control strategies to reduce energy consumption while maintaining occupant comfort.

- > Use of insulation levels exceeding code minimums in critical areas to reduce heating and cooling demand.

1.1.3 SEPP 2022 Sustainable Buildings for Non-residential Buildings

The SEPP 2022 requirements under Chapter 3.1(2)(c) do not apply to residential care facilities; as such, Building D (Aged Care facility) is not required to demonstrate compliance with this SEPP. However, where feasible, best-practice sustainability principles will still be integrated to reduce operational impact.

1.1.4 SEPP 2022 Sustainable Buildings for Residential Buildings

The BASIX assessment outlines a minimum target of improvement for the class 2 component of the proposed development's water, energy and thermal comfort performance. The minimum benchmark of improvement for each index is based on the location, size, height and dwelling density of project development.

- > All units to 'pass' the minimum thermal performance energy requirements for heating and cooling (as defined by the development's climate zone)
- > The minimum targets required for water and energy represent a percentage saving and improvement for the development when compared to that of an average benchmark development for NSW. The following energy and water saving targets are required to meet for the development:
 - Energy: 65% energy savings compared to standard benchmark
 - Water: 40% water savings compared to standard benchmark
- > The thermal comfort targets are assessed on an individual dwelling basis and are defined by the developments proposed location in NSW. Each dwelling must not exceed the maximum annual predicted heating and cooling load capacities outlined by BASIX; this is assessed using the NatHERS thermal comfort software (e.g. HERO).
- > No individual apartment is to be below 6 Stars, with the average of all apartments at 7 stars.

BASIX also includes a materials index to measure embodied emissions – the amount of greenhouse gases generated in production and transport of construction materials for residential development.

1.1.5 Tweed Shire DCP requirements

The project will align with the Tweed Shire Development Control Plan (DCP) principles across four core sustainability themes:

Energy Efficiency

The ability of the development to optimise thermal performance, thermal comfort and day lighting will contribute to the energy efficiency of buildings, providing increased amenity to occupants and reduce greenhouse emissions and, with them, the cost of supplying energy.

Objectives

- > To reduce the necessity for mechanical heating and cooling.
- > To reduce reliance on fossil fuels.
- > To minimise greenhouse gas emissions.
- > To support and promote renewable energy initiatives.

Controls

- > Developments are to obtain BASIX certification where required.
- > Commitment to maximising daylight access and natural ventilation, reducing reliance on mechanical conditioning.
- > Optimised building orientation and shading devices to improve thermal performance.

Waste Management

The minimisation and management of waste from development can contribute to the visual and physical amenity of the building as well as limiting potentially harmful impacts on the environment. Minimising waste is relevant to all stages of the building's life cycle, from construction to demolition. It also includes the way in which waste is stored and collected.

Objectives

- > To plan for the types, amount, and disposal of waste to be generated during demolition, excavation and construction of the development.
- > To encourage waste minimisation, including source separation, re-use and recycling.
- > To ensure efficient storage and collection of waste and quality design of facilities.

Controls

- > A Demolition and Construction Waste Management Plan will be developed in line with AS2601 and Council requirements.
- > Construction methodologies will prioritise reuse of on-site materials and separation of recyclable streams.

Water Conservation

Dwelling design can contribute to environmental sustainability by integrating measures for improved water efficiency. Water can be conserved in two ways; by reducing water demand from the mains and by re-using water which would otherwise be lost as run-off or wastewater.

Objectives

- > To reduce main consumption of potable water.
- > To reduce the quantity of urban stormwater run-off.

Controls

- > All developments are to obtain BASIX certification where required and comply with the relevant requirements of the Building Code of Australia.
- > Incorporation of rainwater harvesting, reuse for landscape irrigation and toilet flushing.
- > Fixtures and fittings to be 4-star WELS rating or higher.

Maintenance

Detailed design and material selection support long-term maintenance of developments. This is particularly important in relation to corrosion issues in coastal areas. On-going maintenance ensures the longevity of

quality architectural and landscape design, sustains and increases the value of property and minimises the life-cycle cost of a development to owners.

Objectives

- > To ensure long life and ease of maintenance for the development.

Controls

- > Landscape species selection will focus on native, drought-resistant planting to reduce irrigation demand and maintenance costs.
- > Specification of corrosion-resistant materials and low-maintenance finishes.

The following sections outline the specific ESD measures and commitments made for the proposed development, demonstrating how the design exceeds standard compliance to meet the SEARs expectations.

2. Project Responses to SEARS

The following section outlines how the proposed development addresses the Planning Secretary's Environmental Assessment Requirements (SEARS) for State Significant Development (SSD):

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

The SEARs require the incorporation of the principles of Ecologically Sustainable Development (ESD) as defined in Section 193 of the Environmental Planning and Assessment Regulation. These principles include:

- a. The Precautionary Principle
- b. Inter-generational Equity
- c. Conservation of biological diversity and ecological integrity; and
- d. Improved valuation, pricing, and incentive mechanisms

a. Precautionary Principle

The Precautionary Principle is essentially 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. Applying the precautionary principle, public and private decisions should be guided by the following:

- Careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment,
- An assessment of the risk-weighted consequences of various options.

The Precautionary Principle represents a pivotal concept in the realm of environmental policy and decision making. It acknowledges the inherent challenges of balancing economic, social, and environmental interests while addressing potential threats to our planet. At its core, the principle advocates that when there are indications of substantial environmental harm that could be either irreversible or of a severe nature, a lack of absolute scientific certainty should not be used as a pretext for delaying actions aimed at averting or mitigating environmental degradation.

To put this principle into practical context, TriCare will approach this principle in the following ways:

- > Engage an independent ecologist to assess the current ecological value of the site and identify any threatened or endangered species.
- > Where feasible, preserve and protect ecologically significant species through responsible construction practices. Landscaping and site management will be designed to support the ongoing survival of native species.

b. Inter-generational Equity

The principle of 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.

Intergenerational Equity is a concept that emphasises fairness and justice in the distribution of resources and environmental impacts between different generations, both current and future. When considering a development project with intergenerational equity in mind, several key factors should be taken into consideration such as Environmental Impact Assessment, Resource and Biodiversity Conservation, and

Climate Change etc. It requires a mindset shift from short term gains to long term stewardship and a commitment to ensure that the interests of future generations are not compromised by current actions.

TriCare acknowledges its responsibility to future generations by:

- > Engaging with Australia's First Peoples and incorporating the recognition of Country, which includes Land, Sky, and Water.
- > Undertaking a Climate Change Adaptation and Resilience Plan to identify potential climate hazards and plan adaptive design responses.
- > Adopting long-term thinking in design and material selection to ensure enduring environmental and community benefit.

c. Conservation of biological diversity and ecological integrity

The principle of conservation of biological diversity and ecological integrity is that the conservation of biological diversity and ecological integrity should be a fundamental consideration.

Conservation of biological diversity and ecological integrity are two fundamental principles of environmental management and sustainable development. They are closely related and interdependent concepts that aim to protect and preserve the natural world and intricate web of life that sustains ecosystems as follows:

- > To protect flora and vegetation so that biological diversity and ecological integrity are maintained.
- > To maintain the quality of land and soils so that environmental values are protected.
- > To maintain air quality and minimise emissions so that environmental values are protected.
- > To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.

TriCare has addressed this principle through the development of a comprehensive Landscape Strategy, which has been prepared to guide the integration of ecological values into the built environment. The strategy includes:

- > Use of locally endemic and indigenous plant species to support biodiversity and habitat creation. A minimum of 80% of all planting species will be indigenous.
- > Rehabilitation of the creek corridor and surrounding landscape areas through targeted ecological restoration zones, including over 7,000sqm of garden and tree canopy coverage.
- > Controlled and strategic planting within Asset Protection Zones (APZs) to balance ecological outcomes with bushfire compliance.
- > Softened landscape edges, scattered canopy vegetation and deep soil zones to support native biodiversity and enhance ecological connectivity across the site.

d. Improved valuation, pricing, and incentive mechanisms

The principle of improved valuation, pricing and incentive mechanisms is that environmental factors should be included in the valuation of assets and services, such as:

- *polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement.*

TriCare has undertaken a Biodiversity Development Assessment Report (BDAR) prepared by Cumberland Ecology, which provides a detailed ecological assessment of the site. This report identifies the biodiversity values of the site, assesses potential impacts, and outlines avoidance, mitigation, and offset measures in line with the Biodiversity Assessment Method and NSW Biodiversity Conservation Act 2016. To mitigate

atmospheric pollution, onsite renewable energy generation (via 140 kW of rooftop solar PV systems) has been included to reduce reliance on grid electricity and reduce greenhouse gas emissions associated with energy consumption.

- *the users of goods and services should pay prices based on the full life cycle of the costs of providing the goods and services, including the use of natural resources and assets and the ultimate disposal of waste*

This principle aims to reflect the full cost of a good or service. This is usually called “accounting for externalities” and reflects a more comprehensive understanding of the economic, environmental, and social impacts. This helps encourage an understanding of the true value of things such as resource conservation.

This principle is reflected in TriCare’s commitment to incorporating sustainable design practices, such as prioritising low embodied carbon materials and water- and energy-efficient fixtures and fittings. These efforts aim to minimise environmental impacts throughout the building’s life cycle. A site-specific Waste Management Plan (WMP) has also been prepared and will be updated to include enhanced operational strategies, particularly around diversion from landfill.

- *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.*

Through the BDAR and WMP, TriCare has prioritised the key areas of environmental concern based on risk, feasibility, and cost-effectiveness. The site’s environmental measures (e.g. native species planting, strategic APZ management, onsite stormwater controls) are tailored to maximise ecological benefit while remaining practical and cost-efficient for implementation and long-term maintenance.

TriCare will be using on-site renewable energy which lends priority to investigating the possibility of establishing a solar microgrid. TriCare are addressing one of the most critical issues by mitigating CO₂-e emissions entering the atmosphere whilst helping to reduce the ongoing operational costs of the precinct itself. This investment, whilst an initial financial outlay of the cost benefit in the short term will see a return on this investment as well as educating the market whilst contributing positively to the economy.

> Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.

- Captured in Section 3 of this report.

> 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.

- Captured in Section 3 of this report.

At DA stage, the project has explored flood risks for the development and concluded that the proposed development works are appropriately sited and elevated to mitigate potential flood hazards. The site layout and drainage design will ensure overland flow paths are preserved and controlled in accordance with local flood management strategies. Further detailed design will continue to address flood resilience in line with the Tweed Shire Council’s flood risk management policies, including consideration for projected sea-level rise and more frequent intense rainfall events under future climate scenarios.

3. Environmentally Sustainable Design (ESD) Opportunities

3.1 General

This section outlines Environmentally Sustainable Design (ESD) measures in accordance with the requirements of Tweed Shire Council. It also highlights additional sustainability opportunities that should be considered during the detailed design stage of the project.

3.2 Energy & Greenhouse Gas Emissions Reduction

In line with the sustainability targets outlined above, the project team will consider opportunities to reduce the building's greenhouse gas emissions through energy-saving and energy-generating design strategies. The project aims to achieve at least a 65% improvement on the BASIX energy benchmark. The proposed aged care facility will be designed in accordance with NCC 2022 Section J – Energy Efficiency requirements, incorporating energy-efficient building services and optimised façade performance.

Heating, ventilation, and air-conditioning (HVAC) systems will be designed to minimise operational energy consumption while ensuring thermal comfort for building occupants. Compliance with the minimum Deemed-to-Satisfy (DtS) provisions will be demonstrated as follows:

- > All window and insulation selections will comply with Parts J1 to J3, meeting minimum performance requirements for the building fabric.
- > All building services will comply with Parts J5 to J8, meeting minimum performance standards for mechanical and electrical systems (including fan and pump efficiency), lighting, and ancillary systems

In addition, the design team will explore the following measures:

3.2.1 Building Fabric Design

- > Use of high-performance double-glazed windows to reduce heat loss in winter and heat gain in summer.
- > Provision of adequate insulation to the external walls, roof, and exposed floors of the building envelope.
- > Glazing with a low solar heat gain coefficient on east and west façades to reduce unwanted solar heat gain.
- > Use of glazing with high Visual Light Transmission (VLT) to maximise natural daylight.
- > Integration of external shading devices on façades to reduce solar irradiance from the high-angle summer sun.
- > Optimised window-to-wall ratios for all façades in non-residential areas to balance daylight, views, and thermal performance.

3.2.2 Heating, Ventilation, & Air Conditioning (HVAC) Design

- > Apartment layouts will be designed to maximise natural ventilation through multiple aspects or cross-ventilation pathways based on prevailing wind direction.
- > Operable windows will be provided to all occupied spaces to reduce reliance on mechanical ventilation.

- > Installation of ceiling fans in living and bedroom areas to reduce air conditioning demand and enhance thermal comfort.
- > Use of high-efficiency reverse-cycle air conditioners, with zoning (e.g. day-night mode) to improve performance and reduce energy use.
- > Selection of HVAC systems compatible with low Global Warming Potential (GWP < 10) refrigerants to reduce refrigerant-related emissions.

3.2.3 Lighting Design

- > Reduce the need for artificial lighting by introducing sunlight through sufficiently size glazed windows.
- > Careful design of daylighting controls to adjust electric lighting in response to daylight levels without causing undesirable noticeable switching effects or interactions.
- > Use of motion sensors to ensure lighting is automatically dimmed or switched off when not required.
- > Select high-efficiency LED lights to provide adequate lighting levels and colour rendering with minimal energy expenditure.
- > Evaluate Whole-of-Life considerations, including maintenance access and replacement costs.
- > Urban sensitive lighting design for the precinct that reduces light spill to surrounding neighbours and minimises the impact on the day-night rhythm of animals.

3.2.4 On Site Renewables

On-site solar photovoltaic (PV) generation will be installed as an effective method to assist with greater reductions in greenhouse gas emissions, helping to minimise the developments electricity consumption from the grid.

The project will allow for:

- > Installation of rooftop PV systems with a combined capacity of approximately 140kW across the development.
- > Use of the most appropriate PV panels and system components to be located on the roofs of each building, considering available roof area, structural capacity, and aesthetic integration.
- > Optimisation of system layout, orientation, and configuration to maximise energy generation while responding to spatial and architectural constraints.
- > Generated electricity will be utilised to offset base building energy loads, including but not limited to lighting, ventilation systems, and lifts.

3.2.5 Metering & Monitoring

- > Incorporate energy monitoring at the distribution level to identify primary energy consumption sources and inefficiencies.
- > Develop a site-specific metering strategy to provide real-time feedback on energy and water consumption across different zones.
- > Monitoring targets will include:
 - Incoming electrical mains supply
 - Incoming water mains supply

- Electrical supply and thermal meters to distinct areas and uses (i.e., sub metres for the Gym area and retail space)
- Lighting systems
- Air conditioning systems
- Large individual equipment loads that exceed 5% of the total energy use (or over 100kVA)
- Large water use that consumes more than 10% of the total water uses
- > Smart Metering: Incorporate smart meters within the building. This will allow for assessment and evaluation of the building energy and water consumption at hourly intervals. This will provide ongoing feedback in real time to the facilities management (daily) for monitoring and tenant billing purposes.

3.3 Water Efficiency & Conservation

In alignment with the Tweed Development Control Plan, Sustainable Buildings SEPP, and SEARs requirements, the development will implement a range of specific water conservation strategies to reduce potable water consumption, promote reuse, and manage stormwater sustainably. The following commitments will be made:

- > A reduction in potable water use, through the installation of highly efficient fittings and fixtures. To prevent water waste, potable water flows will be reduced in line with the WELS certified taps, showers, and toilets.
- > A selection of highly efficient whitegoods (such as fridges and freezers, washing machines, dishwashers and dryers) will be selected in line with a water efficient WELS Star rating.
- > Rainwater harvesting systems will be installed across all major roof areas. Captured water will be stored in appropriately sized rainwater tanks, with a minimum storage capacity to be confirmed at detailed design of the project. The project team will undertake a rainwater capture assessment during the detailed design to confirm feasibility of roof run off areas.
- > Where feasible rainwater re-use will be used for landscape irrigation to all green areas and landscaping surrounding the development and within the site boundary.
- > The provision of low water or drought resistant and native planting for all green spaces.
- > The fire protection system will be designed to include test water collection and re-use capabilities, ensuring that fire system testing does not lead to unnecessary potable water waste.
- > Water Sensitive Urban Design Techniques has explored to help manage stormwater run-off and pollution. The post development stormwater flows will be managed with a series of techniques:
 - garden beds designed for infiltration in deep soil zones surrounding the development and within the site boundary.
 - swales and soakwells that can detain stormwater and increase percolation into the soil.
 - any other artificial filtering and treatment system as applicable for positive outcome under the Stormwater Management Plan.
 - Post development stormwater flows will be managed with a series of infiltration tanks on site.

These measures represent a clear commitment to exceeding minimum compliance and delivering tangible water conservation outcomes throughout the lifecycle of the development.

3.4 Waste Management Practice

A detailed Waste Management Plan has been developed by HMC Environmental Consulting (dated February 2025) to address both construction and operational phases of the development. This plan is currently being updated to further align with operational needs and will incorporate all initiatives outlined below to ensure robust and effective waste practices are implemented. These strategies will align with the NSW Waste and Resource Recovery Strategy, the Tweed Shire Council Towards Zero Waste Policy, and aim to achieve diversion rates that exceed standard practice.

- > A Construction Waste Management Plan has been developed in accordance with best practice guidelines. The project will implement measures to minimise waste generation and maximise reuse and recycling, with a commitment to exceed average landfill diversion rates for developments of this type.
- > An Operational Waste Management Plan has been developed to manage ongoing waste generation from the RAC and ILU components. This plan will include the following initiatives:
 - Identify the waste streams relevant to the different operations of the residents (i.e., compostable food waste or medical waste by the Aged Care Building), and the individual roles responsible for implementation.
 - Outline methods for encouraging the separation of waste streams, such as bins, storage areas, or recycling facilities in common areas as required.
 - Supporting charity and opportunity shops to recover unwanted items of value for resale and reuse.
 - Delivering waste minimisation and recycling education and behaviour change programs.
 - Identify safe methods for vehicle access and transfer of waste.
 - Consideration of onsite bio-digesters to process all organic food waste on site to then be distributed as fertiliser for ongoing landscaping maintenance.

3.5 Materials

The project will implement a responsible materials selection strategy that prioritises low embodied carbon, sustainable supply chains, and improved environmental and health outcomes.

- > The building's structure, envelope, systems, and finishes will incorporate responsibly sourced and low embodied carbon materials. During the procurement phase, preference will be given to materials with recycled content and verified sustainability credentials, such as Environmental Product Declarations (EPDs) or third-party certified eco-labels.

3.6 Sustainable Transport

The project will implement a range of sustainable transport initiatives aimed at reducing personal car dependency and promoting low-emission and active transport alternatives for residents, staff, and visitors.

- > While EV charging infrastructure is not currently being provided or planned for, the design allows for future installation of above-ground EV charging stations in surplus car parking areas provided onsite.
- > Secure bicycle storage and parking facilities will be installed for residents and visitors to encourage cycling as a viable transport mode.
- > Tricare currently operates private shuttle buses for residents and will continue to provide this service as an alternative to personal vehicle use.

Located at Hastings Point and surrounded by natural assets such as Cudgera Creek and Hastings Point Lookout, the development is well positioned to encourage non-car-based travel. The following specific transport features will be delivered or facilitated:

- > Walkable access to Stage 1 amenities, including a health hub, café, and salon, will minimise the need for short car trips and support residents' physical and mental wellbeing.
- > Direct access to public bus services via nearby stops at the front of the development will reduce reliance on personal vehicles and decrease traffic impacts.
- > TriCare also provides community buses to ensure residents have regular and convenient access to local services and destinations.
- > Bicycle cage storage will be installed for residents to promote active modes of transport.

3.7 Biodiversity in Design

The project will minimise its impact on the natural environment and support local biodiversity through the following measures:

- > The building's design and construction will conserve existing natural soil profiles, hydrological flows, and vegetation, incorporating deep planting zones as a core landscape element.
- > The development will prioritise the use of locally endemic plant species, as outlined in the Landscape Design Intent Report, while balancing bushfire management requirements that limit tree canopy coverage.
- > Outdoor lighting will be designed to minimise light pollution, protecting adjacent natural habitats, the night sky, and airborne fauna from unnecessary light spill.
- > The project will integrate knowledge of the site's historical and current ecological context to inform landscape and ecological design strategies that enhance biodiversity on-site.
- > Local waterways will be protected and the design will aim to reduce flooding and drought-related impacts by lowering average annual stormwater discharge rates and achieving stormwater pollution reduction targets.

3.8 Sustainable Management Practices

The project will implement a range of sustainable management strategies to support best-practice environmental performance across both the design and construction phases. The following initiatives will be delivered:

- > Set project-specific environmental performance targets, including commitments to monitor and measure building performance in energy, water, waste, and indoor environmental quality.
- > Undertake independent commissioning activities, including a 12-month post-occupancy building tuning program for nominated building systems following practical completion.
- > Develop and issue a Building Users Guide for all tenants and building occupants, ensuring accessible, easy-to-understand information on building operations and sustainable practices.
- > Develop a best practice Construction Environmental Management Plan (CEMP) supported by a formalised management system for implementation throughout the construction phase, ensuring environmental risks are proactively addressed.

3.9 Climate Change Resilience

The project will implement a climate resilience strategy in line with Tweed Shire Council's objectives to future-proof the built environment and protect the community from the impacts of climate change. The following commitments will be integrated into the project:

- > Mechanical systems will be sized using future climate files, accounting for increased ambient temperatures, higher humidity, and more frequent extreme heat days.
- > Design for blackout resilience will be included, ensuring the building maintains a baseline level of functionality and thermal comfort during power outages.
- > Passive design strategies such as solar control, cross ventilation, and thermal mass will be maximised to minimise dependence on mechanical systems.
- > Water Sensitive Urban Design (WSUD) measures will be implemented to address increased rainfall and surface runoff.
- > Urban Heat Island (UHI) mitigation strategies will be integrated into at least 75% of the new development site area. These include:
 - Providing additional canopy planting.
 - Use of high SRI (Solar Reflectance Index) materials on roofs and shading devices.
 - Shaded pavement areas and permeable surfaces.
 - Infrastructure designed to enable demand response or active onsite generation where feasible, contributing to grid resilience.

Flood Risk Management: At DA stage, a flood risk assessment was undertaken, confirming that the proposed development is not expected to be impacted by floodwaters during the Design Flood Event. All habitable floor levels are designed to exceed the minimum level of 3.1 m AHD.

Bushfire Risk Management: The site has been identified as bushfire prone in the Draft Bushfire Assessment Report by Building Code & Bushfire Hazard Solutions Pty Ltd. The following design responses will be implemented:

- > Interface access to fire hazards via proposed internal roads and a perimeter fire trail, with hydrants installed at regular intervals.
- > Defendable space will be provided for attending fire services through compliant setbacks.
- > Bushfire safety will be improved through:
 - Reduction in occupant numbers compared to previous applications.
 - Enhanced Asset Protection Zones (APZs) exceeding those in the approved application.
 - Installation of a hydrant system in accordance with AS 2419.1.
 - Improved onsite access for firefighting appliances.
 - Development and implementation of a Bushfire Emergency Management Plan prior to the Occupation Certificate.
 - All building works to comply with the applicable Bushfire Attack Level (BAL) rating under AS 3959:2018.

On a quest to inspire a better world through influence and design.

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