Longhurst

Edgecliff Centre

Planning Proposal ESD Report

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1 Introduction

This ESD Report has been prepared on behalf of Longhurst Investments No. 1 Pty Ltd in support of a planning proposal for the Edgecliff Centre (the site). The planning proposal will support amendments to the Woollahra Local Environmental Plan 2014 in order to facilitate the future redevelopment of the site for a mixed-use development comprising retail/commercial/medical/well-being uses podium and residential tower.

Specifically, in order to facilitate the future redevelopment of the site for the intended purpose, the planning proposal seeks to:

- Increase the maximum Height of Buildings development standard and
- Increase the maximum Floor Space Ratio development standard.

The planning proposal is supported by an indicative development concept. The concept is indicative only and has been prepared for the sole purpose of demonstrating that the planning proposal can deliver a viable scheme within the amended controls being proposed.

The indicative development scheme includes:

- Commercial, retail, medical/wellness facilities and residential.
- Provision for a publicly accessible open space sky-park at podium level.
- Introduction of public community space.
- Revitalisation and enhancement of the existing intermodal and transport interchange within the site.
- Public domain improvements at ground level including a new plaza and permeable transit interchange entry way; and
- Improvements to existing vehicular access and loading dock arrangement.

1.1 General

This report supports a planning proposal for 203-233 New South Head Road, Sydney to support its renewal with a mixed use development comprising of a podium including retail, commercial and medical uses and a residential tower. This planning proposal is submitted to the Woollahra Municipal Council. Longhurst Group is the proponent of the planning proposal. It is noted the concept will be referred to as Edgecliff Centre throughout this report.

1.2 Site Description

The site is located at the corner of New South Head Road and New McLean Street, within Edgecliff in Woollahra in Sydney's Eastern Suburbs. The site is adjacent to Edgecliff Station and bus terminals on New South Head Road. The site is large regular shape block with an area of 4,910m^2.

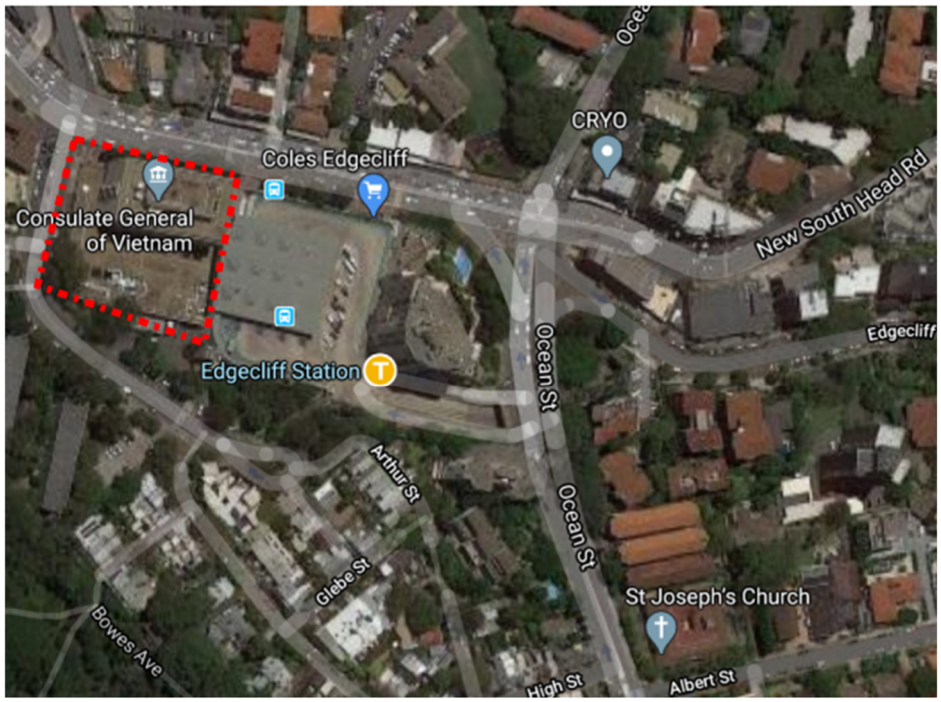

Figure 1 The Site

1.3 Overview of Proposed Concept

The proposed concept comprises of residential, commercial, medical and retail uses and may involve/include:

- Demolition of part or all existing structures;
- Excavation and site preparation, including any required remediation;
- Construction and use of a mixed-use development, with a residential tower, publicly accessible open space, community space, retail and commercial space;
- Eight (8) basement levels residential and retail car parking, motorcycle parking, loading dock, storage and relevant building services;
- Improvements to the public domain, including landscaping, pedestrian thoroughfares/connections to Edgecliff Station, upgrades to the transport interchange with improved intermodal connections and provisions of improved public space with the publicly accessible open space, plaza and internal Community Space; and
- Augmentation and extension of utilities and services.

A detailed description of this concept is provided by Ethos Urban.

2 Sustainability Requirements

The overall ESD concept design strategy for the site and its buildings has been developed to respond to Woollahra Municipal Council's Development Control Plan (DCP) 2015, Local Environment Plan (LEP) 2014, Environmental Sustainability Action Plan 2013-2025 and Woollahra – 2030, a community strategic plan. State Environmental Planning Policy (SEPP) is referred to with regards to the residential development.

The following section lists the sustainability objectives relevant to the development from the variety of sources which help inform the buildings overall strategy. Against each target the relevant sections of this report are listed.

2.1 Planning Targets Summary and Evidence

A summary of the environmental targets relevant to the development are listed below:

	Goal/Requirements	**Relevant report section**
SEPP - BASIX		
Water	40% reduction in water use	2.2.2
Energy	25% reduction in energy use	2.2.2
	BCA Section J 2019	2.2.1
NABERS Energy	5 Star	2.3/4.4.1
Environmental Sustainability Action Plan (2018)		
Energy Target	30% reduction in greenhouse gas emissions by 2025	4.4
Water Target	50% reduction of 2005/6 levels of water consumption (from mains) by 2025	4.3
Waste Target	75% waste diversion from landfill by 2022	4.5
Woollahra - 2030		

Community wellbeing	Provide and facilitate a range of community projects, programs and events	4.7
	Provide places and spaces for people to connect and interact	4.7
Quality places and spaces	Encourage and ensure high quality planning and urban design outcomes	4.7
	Enhance the form and function of local business centres	4.7
	Enhance local community, cultural and recreation facilities to become more attractive, integrated and accessible	4.7
	Provide and maintain safe, clean, serviceable public infrastructure including road, footpaths, bicycle facilities, parks, open space, stormwater drains and seawalls	4.7
	Provide attractive, accessible, connected and safe parks, sports grounds, foreshore areas and other public spaces	4.7
	Enhance the physical environment of our local suburbs, neighbourhoods and town centres	4.7
A healthy environment	Reduce greenhouse gas emissions and ecological footprint	4
	Monitor and strategically manage environmental risks and impacts of climate change	4.9
	Encourage and assist our community to be leaders in waste management and resource recycling	4.5
	Reduce local water usage	4.3
	Promote and carry out water sensitive design	4.3.3

Local Prosperity	Encourage vibrant and vital local suburbs, villages and neighbourhoods that support a healthy economy	4.7
	Maintain a high quality public domain to support and promote local businesses	4.7

2.2 Section J and BASIX Compliance

The future retail and commercial spaces will seek compliance with Section J 2019 NCC and the residential portion is seeking compliance with BASIX.

2.2.1 Section J – NCC 2019

The building envelope of the concept design for the commercial and retail portions of the development have been developed in conjunction with the architects to meet the Section J of 2019 NCC. Modelling will be undertaken to ensure that throughout design development that Edgecliff Centre complies with requirements.

2.2.2 BASIX

The residential development will be developed in conjunction with the architects to meet the following BASIX targets

- BASIX Energy 25
- BASIX Water 40

Key apartments will be assessed to ensure that they are capable of achieving NatHERS > 6.0. Full assessment of all apartments for both BASIX and NATHERS is pending and will be issued as part of the finalised submission.

Heating and cooling loads will be calculated during the modelling process and will be maintained below the maximum loads stated in BASIX guides.

2.3 NABERS

Commercial office spaces will aspire to achieve a 5 Star NABERS energy rating in line with council ambitions to reduce greenhouse gas emissions by 30% by 2030.

3 Overall ESD Strategy

The building design will integrate sustainable initiatives to ensure superior environmental performance of the development.

The design will provide a superior indoor environment for the occupants. A combination of energy efficient and cost effective air conditioning systems will be designed aiming to provide improved thermal comfort for the occupants of the buildings.

Currently the indicative scheme's proposed servicing strategy is as follows:

HVAC

Residential – Centralised water cooled system.
Office –All-air VAV system with centralised AHU.
Retail –Retail units will be provided with condenser water connection for use with water cooled PAC units.

Electrical

Where possible LED light fittings and best practice energy efficient appliances will be installed throughout the development.

Hydraulic

This will take a best practice approach. All essential features to ensure water efficiency will be integrated in the design of the hydraulic systems. Water efficiency is considered to be an essential feature of the building, and this issue was agreed to be clearly reflected in design and technological strategies that are proposed for the building.

The purpose of this document is to discuss the ESD opportunities that will be incorporated within the building's design.

The following areas will be the focus of the design team:

- Energy – reduce energy use and greenhouse gas emissions. The building's envelope and services have been integrated to ensure the building is controlled to maintain the desired conditions whilst optimising the energy efficiency of the complex.
- Indoor Environmental Quality – design the building to maximise occupant comfort addressing issues of thermal and visual comfort and indoor air quality.
- Water – minimise potable water consumption and optimise the water efficiency of the development.
- Materials and Waste – minimise waste, encourage reuse and recycling of materials and use low environmental impact materials.
- Transport – encourage more energy efficient and less polluting forms of transport to and from the site.
- Climate change adaptation and resilience – a study of associated risks will be undertaken and any risks categorised as 'high' will be resolved within design development.

- Community Amenity – the development plans to integrate external and internal community spaces to work alongside council targets to improve public infrastructure. In addition the development proposes to provide improved public thoroughfare from the train station and bus terminals.

  Benchmarking – Benchmarking the building against examples of Australian excellence will be undertaken throughout the design process. The sustainability rating aspirations targeted as part of this are detailed in this report namely:

  Commercial Levels:

  - NABERS Energy: target rating 5 Stars

  Retail Podium:

  - BCA Section J compliance

  Residential Levels:

  - BASIX minimum targets

The proposed ESD initiatives will be developed during the next design stages by the design team to achieve the development targets.

As buildings are responsible for 40% of CO_2 emissions there is a need to further reduce their environmental impact in the coming years. This involves incorporating the flexibility required to accommodate mechanical systems and fitouts that feature energy efficient technologies and the ability to adapt to multiple uses.

4 ESD Initiatives

Aiming at leading practice in energy and environmental targets, the design team will focus on the following strategies for the proposed concept:

- Energy efficiency
- Improved Indoor Environmental Quality for building occupants
- Water strategies to minimize potable water consumption and address stormwater management
- Use of reused or recycled materials to reduce embodied energy
- Provision of facilities to encourage recycling over general waste
- Effective transport strategies to reduce vehicular emissions
- Improved community amenity
- Environmental benchmarking – aiming at BASIX targets as described above.

These issues will be addressed by the design team through the consideration of the following initiatives:

Initiatives	Edgecliff Centre
Building Envelope	High performance building envelope with added fabric insulation and shading to improve energy efficiency and address indoor environmental quality.
HVAC system	Highly efficient mechanical systems centralised where possible. Investigate use of adaptive comfort principles in the retail mall areas to avoid full mechanical system.
Renewables	Photovoltaic panels will be considered in the roof areas to offset electricity use and reduce energy use and carbon emissions associated with the building operation.
Water	High efficiency water fixtures. Rainwater harvesting and reuse will be considered during the course of the design development.
Stormwater	Management of stormwater on site before discharging into the public infrastructure through the implementation of appropriate stormwater treatment devices such as an onsite detention tank.
Materials	Selection of reused /recycled materials where possible.
Waste	Construction and demolition waste will be reused/recycled as appropriate to avoid waste material going into landfill.
Community Amenity	Provision of publicly accessible open space including an area for public art and internal community space. Provision of new interchange between train station and bus terminals.
Climate change adaptation and resilience	Reporting will be undertaken to understand the risks to the development with respect to climate change. Where risks identified as ‘high’ the design will seek to address them in order to future proof the development.

The design concepts incorporated in the report are discussed in detailed in the following sections.

4.1 Building Envelope

The building envelope is essential in the design to guarantee the delivery of an appropriate environment. The role of the envelope is to block solar gains from penetrating the building fabric in summer while optimising daylight levels and minimizing glare. The glazing performance and shading configuration for each orientation will be optimised to ensure that thermal comfort is achieved, and solar gains are adequate for the efficient operation of the mechanical system.

The façade will be designed with a very high energy performance requirement to achieve the NABERS energy rating and BASIX Energy targets for the residential tower External shade elements, spandrel zones and high performance double glazing will be investigated to provide high levels of thermal comfort and visibility are achieved. The façade will be designed to optimise the façade performance in terms of thermal comfort, energy, daylight, maintaining views, achieving high levels of visual light transmission, minimising the required hours of the proposed mechanical system and access for maintenance.

4.2 Mechanical System

In design, emphasis will be placed on providing an appropriate level of system resilience and quality to ensure efficient operation of the buildings. The integration between the selected mechanical system and the façade performance play a fundamental role in delivering high levels of thermal comfort to occupants whilst optimizing energy consumption through building operation.

In the retail mall it is proposed that an innovative approach be taken to investigate using the principles of adaptive comfort to help minimise use of the mechanical system. Adaptive comfort is the principle that an occupants comfort is determined by the mean of the outside temperature over the preceding month. Therefore, in warmer weather an occupant will be comfortable at a slightly elevated temperature which has been found to be especially true in transient, semi-outdoor, naturally ventilated spaces. By providing air movers and utilising spill air from retail spaces the mall conditions can be tempered whilst reducing annual energy consumption. These opportunities will be investigated throughout the course of the design work.

4.3 Water

Central to the developments concept strategy is utilisation of water efficient fixtures and fittings and careful selection of appliances for the residential units. In addition it is acknowledged that water recycling is a key component of the total water cycle management and integrated water resource management. Water recycling is fundamental to manage and balance all of the components of hydrological cycle (rainwater, stormwater, wastewater, groundwater, surface water and recycled water) to secure a range of social, economic and environmental benefits. The effective and safe implementation of water recycling strategies can help to reduce inputs of nutrients and other contaminants to surface water, conserve potable water and provide economic and social benefits to local

communities. Opportunities for water recycling and reuse particularly rainwater reuse will be considered for the development.

4.3.1 Building Water Strategy

To ensure water resources are maximized, Rainwater will be harvested through the roof and tanks sized to supplement water for HVAC cooling tower demands. The HVAC water demand will exceed the rainfall and thus WC flushing is unlikely to offer tangible water saving benefits. Notwithstanding this, consideration will be given during design development to harvested rainwater being delivered for irrigation and WC flushing.

The following initiatives are being considered for the development:

- Water efficient fixtures – 5 Star rated taps and 3 Star rated shower heads based on WELS rating scheme.
- Low flow urinals with a minimum 6 star WELS rating.
- 3 / 4.5 Litre dual flush toilets with a minimum 4 star WELS rating.
- Roof catchment area and rainwater tanks to provide water for reuse.
- Treatment: Filtration and disinfection of harvested water as appropriate to the uses.

4.3.2 Stormwater Treatment

All new stormwater drainage for the entire development is proposed to comply with the following:

- Woollahra DCP 2015 – Part E2

4.3.3 Water Sensitive Urban Design (WSUD)

Water Sensitive Urban Design encompasses all aspects of urban water cycle management, including water supply, wastewater and stormwater management. WSUD is intended to minimise the impacts of development upon the water cycle and achieve more sustainable forms of urban development.

This will involve the consideration and potentially a combination one or more elements such as:

- Bio-swales
- Rain gardens
- Rainwater harvesting tanks
- Proprietary treatment tanks
- Gross Pollutant Traps

4.4 Energy

It is essential to ensure the development is designed and built to minimise energy consumption and reduce greenhouse gas emission to the atmosphere. Energy performance is considered by the design team as a crucial issue and the following measures will be targeted in the proposed design of each component:

Building	**Minimum Energy Target**
Residential	BASIX Energy 25
Retail	Section J – NCC2019
Commercial	NABERS Energy 5 Star

This level of performance is attributed mainly to:

- A high-performance facade designed to reduce solar gain to perimeter areas for all buildings.
- The use of a high efficiency mechanical system to provide cooling effectively.
- High efficiency chillers performing better than the Minimum Energy Performance Requirements (MEPS).
- Reduction of tenant lighting: Due to increase natural daylight quality, and integration between natural and artificial lighting systems.
- Use of renewable energy and low carbon technology to offset greenhouse gas emissions where practical.
- Carbon dioxide sensors will be considered to continuously monitor the concentration of carbon dioxide inside the office environment and optimise the outdoor air rates provided to the space. The energy consumption associated with tempering outdoor air will be reduced, as the system will balance the outdoor air rates with the building's occupancy.
- Use of air movers and spill air to temper retail mall to minimise HVAC energy requirements.

4.4.1 NABERS Energy for Office

The commercial office component of the development aspires to a NABERS Energy rating of 5 stars in design. Achievement of this is to be demonstrated through energy modelling of the building's performance to assess the effectiveness of the building envelope and services efficiency.

4.5 Materials and Waste

The project where practical will take best practice guidelines from Green Star Design & As-Built v1.3 to inform the design and development of material and waste strategies namely:

- Credit 8 – Operational Waste
- Credit 22 – Construction and Demolition Waste
- Credit 20 – Responsible Building Materials
- Credit 21 – Sustainable Products

Although whether the development will pursue a Green Star rating is still under consideration the Green Star principles will help the development target best practice regarding waste and material selection.

Construction and demolition will target a 90% diversion of waste from landfill. Wherever practical materials will be saved in order to reuse.

An operational waste management plan will be written for the project considering the complex nature of the mixed use building. This plan will focus on optimising recycling and reuse rates within the development. Residential units will be provided with means for waste separation and possible opportunities for composting and recycling organic matter will be investigated through the course of design development.

Responsible material selection will ensure high recycled material rates where practical and all timber used throughout construction will be certified. On selecting products for the fitout of residential units and commercial floors products with environmental product declarations and third party certification will be preferred.

4.6 Daylight

One of the main considerations given to the design in the next stage when the façade is developed will be the importance of treating daylight in particular ways as to respond to needs of different areas in the buildings. Natural light offers benefits such as improving indoor environmental quality, having impact on the health, wellbeing and productivity of occupants, and reduction in energy consumption and greenhouse gas emissions by reducing dependency on artificial lighting systems when integrated with lighting controls.

Lighting is one of the main factors contributing to energy consumption in commercial buildings, thus making daylight availability is one of the key elements of addressing sustainability in a building in the current and future market contexts.

The following elements in the building will be considered to optimise daylight performance:

- Selection of appropriate new glass capable of reducing solar loads while allowing generous amount of daylight to penetrate the building envelope.

- Use of appropriate glazing and shading if deemed appropriate for specific building areas. This will ensure daylight is maximized and glare mitigated as far as possible.

4.7 Community Amenity

Urban green space fulfils a critical role in offsetting the ecological impacts of the urban built environment and enhancing the quality of city life.

A main focus of the development concept has been the creation of new publicly accessible landscaped areas on site which will provide the following benefits:

- Offer space for recreation to the community.
- Increase the ecological value of the site by providing animal and plant habitat.
- Improve air quality.
- Reduce the site's contribution to the urban 'heat island' effect by reducing solar absorptive surface area and cooling the site microclimate through plant evapotranspiration.
- Promote healthy lifestyles by providing space for outdoor activity.

The regeneration of the 'Edgecliff Precinct' incorporates key public benefits focusing on improving existing key infrastructure whilst creating a green and connected precinct for the wider community to enjoy.

Some of these improvements include;

- **Publicly Accessible Open Green Space** – Adjoining the Bus Terminal it is proposed to incorporate a publicly accessible open green space with key connections from the bus terminal to the train concourse and local streets and providing a community facility of a new open public space. The park will significantly improve the interface with the bus terminal and seek to provide further connectivity synergies with the transport uses on the site.

  The park's amphitheatre-like experience will provide ample opportunity to gather and congregate within the space. Features may include naturally rolling hills across 2 levels, trees & planting, gardens, hard and soft landscaping, bicycle parking, open spaces for seating, leisure and retreat and varying place making initiatives.

- **Entry & Plaza** – The creation of a new volumetric entryway for the Edgecliff Transit Interchange along New South Head Road helps improve the way finding and identification of the transport options and is accompanied by a large plaza. The plaza seeks to incorporate the Intermodal Vertical connection points as well as providing a generous space for various placemaking opportunities such as seating, congregating, public art-gallery display as well as providing key connections into the Edgecliff Station and Bus Terminal.

- **Vertical Transport Link** - The proposal has an opportunity to incorporate escalators within a naturally lit 4 level atria. Providing direct access from the train concourse to the bus terminal a natural consequence of this space provides natural light to the concourse level and introduces key connections throughout the two buildings various uses including transit, Medical/wellness, new and existing retail gallery, offices and sky park.
- **Community Space** – The proposal will include a community space adjoining the publicly accessible sky park which can be utilised as a student study room, meeting spaces or other ancillary uses based on a needs basis which will seek to be finalised with further community engagement.
- **Improved Connections and way finding** – A key philosophy for the proposal is to improve the pedestrian movement within the site and locality through a new and improved intermodal connections, better accessibility from the local street system to the key transport interchange and improved sight lines, key access ways/through site links and inclusive way finding strategies.
- **Interconnected Podium** - A new podium integrating key uses that are publicly orientated and enhances Edgecliff as a destination for a medical/wellness, retail and employment hub of Eastern Sydney whilst improving the transport experience for the wider community.
- **Medical/Wellness Precinct** – Based on the local demographics Edgecliff and the wider Woollahra LGA has an above average aged population. Edgecliff has subsequently become renowned for a precinct with varying medical offerings sporadically located. The development will seek to create a curated medical/wellness offering well identified and connected with key public transport to ensure the offering is suitable and meets the needs of the local community. The project team will seek to partner with local health care providers to potentially run this facility and curate to complement existing larger facilities within other medical precincts identified by State strategic guidance.

4.8 Transport

The use of motorised transport (both private and commercial) has been a major contribution to environmental pollution and the excessive consumption of natural resources.

The development has the opportunity to create an environment where pedestrian access is prioritised and the use of sustainable modes of transport is stimulated by:

- Encouraging walking and cycling by ensuring provision of bicycle facilities for building users; and
- Improving thoroughfare to existing mainline station and bus terminals.

4.9 Climate Change Adaptation and Resilience

In order to ensure resilience of the Edgecliff Centre development an investigation into the risks and opportunities associated with climate change will be undertaken. Where opportunities are identified these will be integrated into the project design. Where risks are identified as ‘high’ these issues will be resolved through design development. This ensures the development will have a long rich life at the centre of the Woollahra community.