

Walker Corporation

Lot 30 Maroochydore City Centre

Sustainability Strategy Report

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Our Vision is to **think beyond the square**.

Our **Mission** is to create spaces, places, and communities that are positive for both the environment and for people. We will do this by providing our clients with sustainable and bespoke solutions that are innovative, challenge perceived ideas, and push the boundaries of achievement and excellence.

We confirm that all work has been undertaken in accordance with our ISO 9001 accredited quality management system.

Acknowledgement of country

The dsquared team wish to acknowledge the Traditional Custodians of all country throughout Australia, and their cultural, spiritual, physical, and emotional connection with their land, waters, and community. We pay our respects to all Elders past, present, and emerging.

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1 Introduction

1.1 Introduction

This document describes the ESD initiatives included in design of the Lot 30 Maroochydore City Centre residential development.

These measures aim to deliver high quality amenity for all residents while minimising the environmental impact of the development throughout both the construction and operational stages.

This report follows the development of the building design by the integrated design team lead by Walker Corporation (developer) and Plus Studio (architect).

1.2 ESD principles

The overarching ESD principles for the project are that it:

- has low operating costs;
- is all-electric;
- is energy efficient;
- is water efficient;
- is resilient to climate change;
- creates a healthy and comfortable environment for residents and visitors;
- creates an indoor-outdoor connection;
- produces minimal waste and maximises opportunities for reuse and recycling;
- promotes sustainable transport options for residents and visitors; and
- promotes social well-being and community connection for residents and visitors.

2 Performance

2.1 Introduction

The ESD performance outcomes achieved by the development are described in this section of the report. A detailed list of ESD initiatives which support these performance outcomes is provided separately in Section 3.

2.2 Daylight

Daylight modelling has been used to inform the design and verify daylight is maximised for all residences and communal areas.

97% of the floor area in living rooms and bedrooms meet best practice daylight levels in accordance with the Green Building Council of Australia's daylight performance criteria from the Green Star Buildings rating tool.

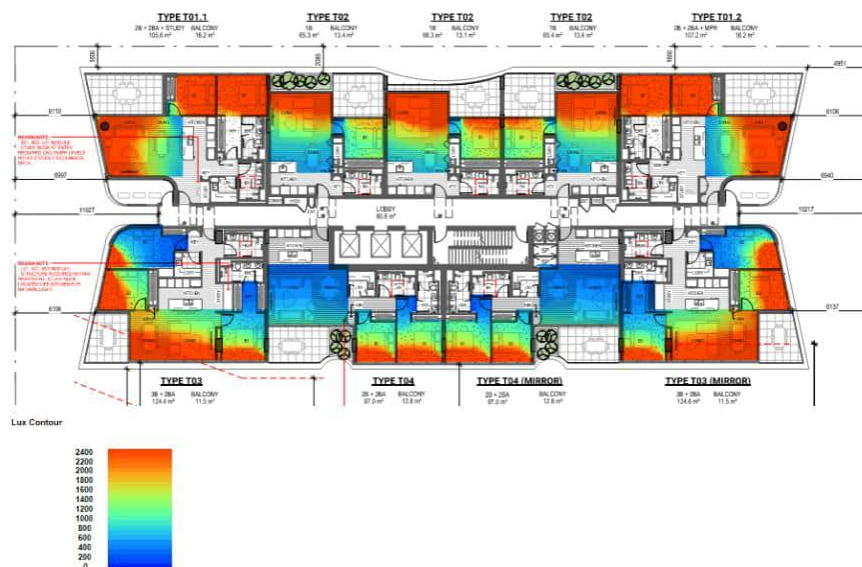


Figure 1: Average lux levels to apartment living rooms and bedrooms.

2.3 Ventilation

All apartment living rooms and bedrooms, as well as apartment corridors, have access to natural ventilation.

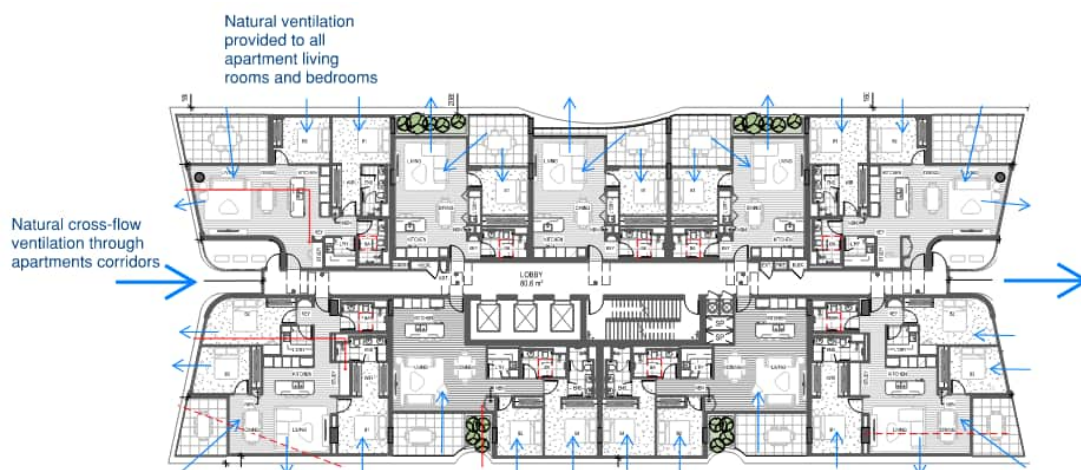


Figure 2: Natural ventilation airflow paths.

2.4 Façade

The façade has been designed to achieve a balance between daylight and thermal comfort/energy performance.

The façade is a double-glazed system with solar performance coating appropriate to the climate conditions, which reduces solar gains without blocking out daylight.

Total system thermal performance values are as follows:

- Fixed windows: U-value ≤ 3.30 , SHGC ≤ 0.36
- Sliding doors: U-value ≤ 3.90 , SHGC ≤ 0.32
- Awning windows: U-value ≤ 5.20 , SHGC ≤ 0.29

2.5 Energy

The apartments are designed to meet an average NatHERS rating of 7-Stars across the development, with no individual apartment achieving less than 6-Stars.

2.6 Water

A 20kL rainwater tank is provided to supply water for landscape irrigation. A potable water feed supports the rainwater system at times of low rainwater availability.

In addition, the sanitary fittings, including taps, WCs and showers, have been selected to reduce water use.

The total potable water demand of the building reduces by 15% compared to a standard practice building as defined by the Green Building Council of Australia.

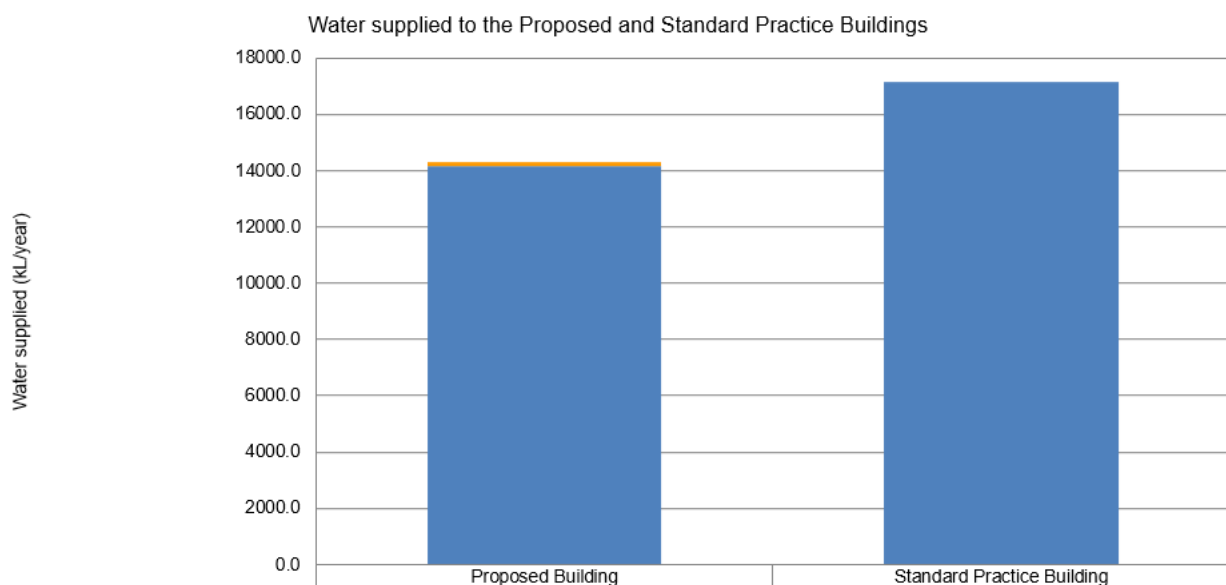


Figure 3: Water modelling graph demonstrating a 15% reduction in potable water use.

3 Initiatives

3.1 Climatic Responsive Design

The following Climatic Responsive Design initiatives are included:

1. All apartment living rooms and bedrooms, as well as apartment corridors, have access to natural ventilation.
2. Ceiling fans are specified to all apartment bedrooms and living areas to further improve air circulation and reduce reliance on artificial cooling.
3. Balconies provide sunshade protection of living areas.
4. The façade is a high-performance double glazed system with a low solar heat gain coating applied, appropriate to the climate conditions.
5. Plants and landscaping have been integrated into the design on each level to improve passive cooling.
6. All apartments include a shaded balcony to encourage outdoor living and maximise daylight access internally.
7. All communal areas are integrated with landscaping and shading structures for thermal comfort and daylight/glare control.
8. Light-coloured external finishes (in particular roof coverings) are specified to reflect heat and reduce solar gain and reduce the heat island effect.

3.2 Indoor Environment Quality

The following Indoor Environment Quality initiatives are included:

1. All bedrooms and living areas have direct daylight access, with 97% of the bedroom and living room floor area achieves best practice daylight levels.
2. Access to daylight and ventilation is provided to all common corridors on apartment levels.
3. All apartments are naturally ventilated, supplemented with ceiling fans installed to bedrooms to further improve air circulation.
4. Provisions for internal blinds is provided to all apartment and communal area windows to control glare.
5. Using paints, sealants, adhesives, carpets, coverings, and furniture which have low off-gassing properties (low VOC, low formaldehyde).

3.3 Energy

The following Energy initiatives are included:

1. The building is fully electrified and will not utilise fossil fuels (natural gas) for heating, cooling, hot water, or cooking.
2. A rooftop solar PV system is provided at roof level to generate free renewable energy for the common area loads.
3. All residences and communal areas are provided with daylight access to reduce artificial lighting energy use.
4. Energy efficient lighting fittings (LED) have been selected to all spaces. Energy saving controls are integrated into common area lighting.

5. Electric instantaneous hot water units per apartment for all domestic hot water.
6. All apartments have their own smart energy meter enabling residents to track and manage their energy consumption. All common area energy usage is metered including sub-metering of all main energy loads.
7. Heat pump hot water system for the communal swimming pool heating.
8. High-efficiency reverse cycle air conditioning systems in all apartments and common areas.

3.4 Water

The following Water initiatives are included:

1. Water efficient fittings with the following minimum WELS ratings:
 - Taps 5 Stars (maximum 6.0 L/minute)
 - WCs 4 Stars (maximum 4.5 L per full flush / 3.0 L per half flush)
 - Showers 3 Stars (maximum 9.0 L/minute)
2. The storage of rainwater in a dedicated 20kL water reuse tank. This will provide feed water for use in landscape irrigation. A potable water feed will be provided to support the rainwater system at times of low rainwater availability.
3. Selecting appropriate landscape planting to minimise irrigation water use, with a focus on a native planting species palette.
4. All apartments have their own smart water meter enabling residents to track and manage their water consumption.

3.5 Community and Social Sustainability

The following social sustainability initiatives are included:

1. A dedicated work-from-home space with work desks and meetings rooms is available for all residents, promoting social sustainability and shared amenities.
2. The rooftop recreation level includes a gym, pool, and sauna room to promote physical well-being for residents.
3. The rooftop recreation level also includes rooftop gardens, dining areas and lounge areas, promoting social well-being for all residents.
4. All communal areas are integrated with landscaping and shading structures for thermal comfort and daylight/glare control.

3.6 Transport

The following Transport initiatives are included:

1. The Maroochydore City Centre precinct is a transit-oriented development (TOD), including an active transport pathway and providing easy access to public transport services.
2. Bike racks are provided around the building entrances at ground floor for visitors and residents.
3. Secure bike storage rooms are provided for residents in central secure locations to encourage sustainable and active travel.
4. E-bike parking is also provided for residents.
5. End of Trip facilities are provided for the retail tenants and building management staff.

3.7 Waste

The following Waste initiatives are included:

1. **Construction waste:** Construction waste will be minimised through efficient design techniques including standardisation and wherever practicable off-site pre-fabrication. A minimum 90% diversion from landfill rate will be targeted for all waste generated during construction.
2. **Operational waste:** The development will be connected to Maroochydore City Centre's underground automated waste collection system (AWCS). The AWCS allows separate disposal of general waste and recycling waste, whereby regular waste collection vehicles are not required. Organic waste is managed via a sink food disposal system in each apartment's kitchen. A dedicated bulky waste room is also provided on ground floor for disposal and recycling of large items such as furniture, mattresses etc.

3.8 Climate Change Resilience

The following strategies are incorporated in the project to improve Climate Change Resilience:

1. **Temperature resilience** - The air-conditioning systems have capacity to accommodate future increases in peak summer temperatures, as is projected to occur due to climate change. The deployment of high SRI finishes, external shading, and landscaping, will help to minimise heat island effect and human comfort stress in the public realm on hot days.
2. **Storm resilience** - A comprehensive stormwater management plan has been prepared, and the stormwater system has capacity to accommodate for future predicted peak stormwater events.
3. **Drought tolerance** - Drought tolerant landscaping species are selected, which reduce the need for regular watering. The irrigation system includes a backup potable water feed service, such that water for irrigation remains available during long periods of low rainfall when the on-site rainwater tank is empty.

3.9 Construction

The following Construction initiatives are included:

1. Select materials with a comparatively low embodied energy/carbon profile wherever practicable, e.g. fly ash in concrete, recycled content in thermal insulation, and reinforcement bar.
2. All concrete will target a minimum 20% supplementary cementitious material (SCM) to replace Portland cement, such as fly ash, GGBS, or equivalent.
3. Using off site pre-fabrication techniques to reduce on site construction time, waste, and greenhouse gas emissions, wherever practicable.
4. Give preference to locally sourced materials and labour where viable.