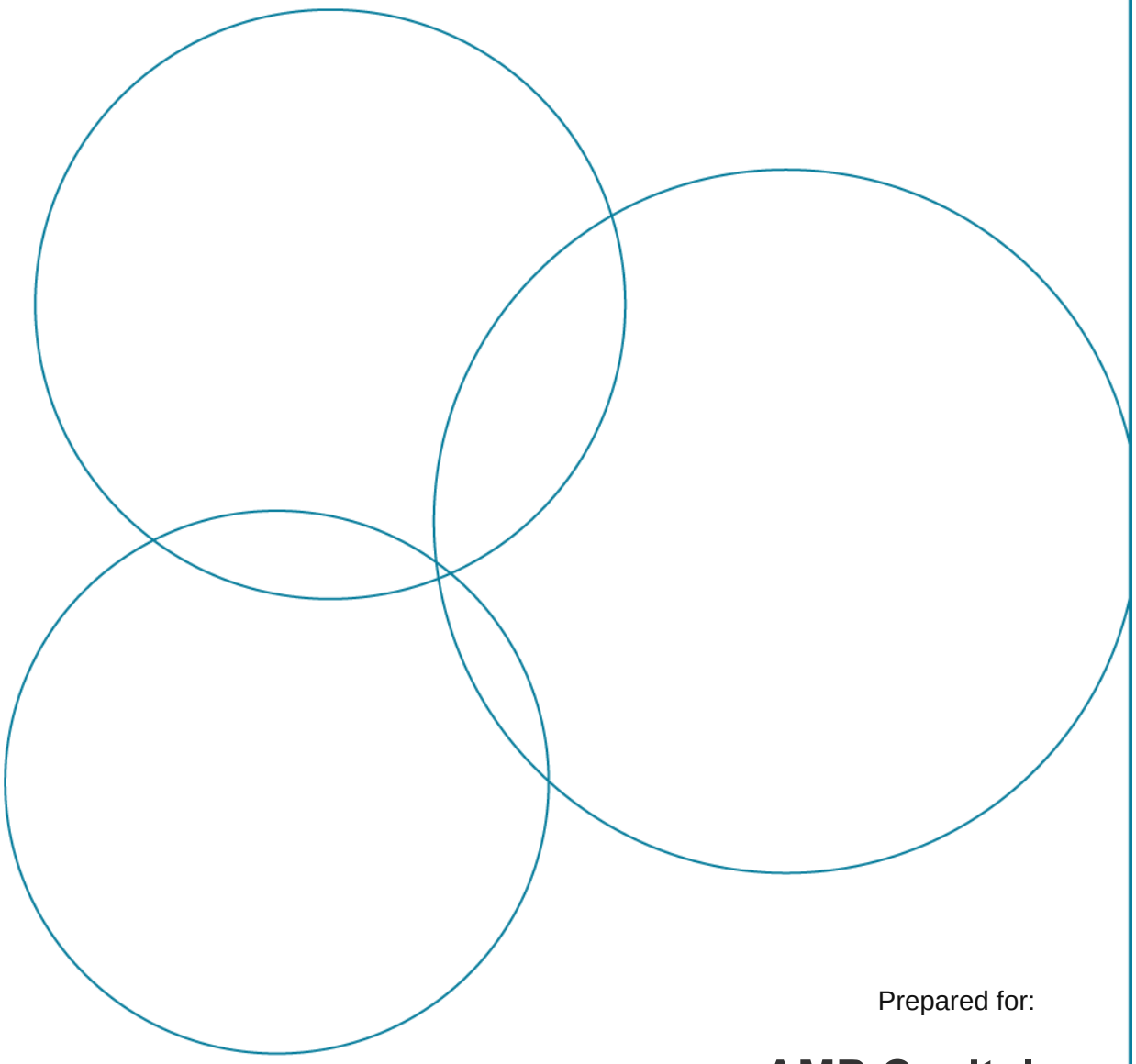
12/10/2017

ESD Report - Response to SEARs

1012492 Marrickville Metro Shopping Centre Stage 1B



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Revision	**Description**	**Date**
A	Updated to report format	12 Oct 2017

The success and realisation of the proposed initiatives will be dependent upon the commitment of the design team, the development of the initiatives through the life of the design and also the implementation into the operation of the building. Without this undertaking the proposed targets may not be achieved.

Contents

1 Introduction

Marrickville Metro Stage 1B is the proposed development of a new standalone retail centre to be located on the adjacent industrial block across Smidmore Street and Edinburgh Streets.

As part of the Section 75W submission Cundall have been engaged to prepare this report in response to the Secretary's Environmental Assessment Requirements (SEARs).

2 Ecological Sustainable Development

The development incorporates a range of ESD initiatives to reduce environmental impact during the design, construction and operation of the shopping centre.

2.1 Green Star

A Green Star pathway has been developed to target a 4 Star Green Star Best Practice benchmark established by the Green Building Council of Australia. While a certified rating is not being pursued at this stage, many of the key principles overlap with NABERS requirements and have been applied as described below.

2.2 Energy & Carbon

The centre is being designed to achieve a minimum 4 star NABERS Shopping Centre rating in operation. Key initiatives include:

2.2.1 Mechanical

- Naturally ventilated car park.
- Mixed mode operation using natural ventilation during temperate periods to reduce ventilation, heating and cooling energy.
- Economy cycles on Air Handling Units (AHU) to maximise benefit of “free cooling” during temperate periods.
- Zoned Variable Air Volume (VAV) ventilation linked to CO2 sensors to modulate fresh air supply to suit demand (e.g. turn down during periods of low occupancy).
- Ducting designed to reduce pressure drops to reduce fan energy consumption.
- Ductwork insulation to reduce heat losses.
- Water cooled chillers to maximise chiller efficiency.
- Staging of chillers to ensure efficient operation at low loads.
- Chiller heat recovery for domestic hot water preheat.
- VSD fans and pumps.
- High efficiency condensing gas boilers for heating.

2.2.2 Electrical

- LED lighting throughout.
- Daylight sensors and dimming of lighting in car park areas when unoccupied.
- Sub-metering of lighting, mechanical and large equipment to facilitate energy management during operation.
- Photovoltaic Panels on rooftop car park level.

2.2.3 Hydraulics

- Water efficient sensor taps to reduce hot water consumption.
- Pipework insulation to reduce heat losses.

2.2.4 Other

- Sensors on escalators to slow down when not in use.
- Commissioning and handover strategy to ensure systems are operating in accordance with design intent.
- Building tuning over the first 12 months.

2.3 Water Conservation

The development will reduce potable water consumption through the following strategies:

2.3.1 Demand Reduction & Efficiency

- Best practice cycles of concentration control and treatment of cooling tower water (combined with reducing strategies to reduce cooling energy demand).
- Minimal landscaping irrigation demand by selecting water tolerant native species.
- 4 star WELLS rated sensor taps.
- Waterless urinals.

2.3.2 Non-potable water supply

- Rainwater collected from roof will be stored then used for toilet reuse, irrigation and cooling tower water make-up.

2.4 Materials and Waste

Materials will be selected to reduce environmental impact and waste including:

- Elements of the existing façade will be retained and incorporated into the new building.
- Majority of existing floor slab to be retained and incorporated in to the new structure
- Low off-gassing paints, sealants and adhesives.
- Use low formaldehyde timber products.
- Recycling centre including segregation of food waste and recyclable waste streams.
- Target of 90% of demolition waste diverted from landfill (excluding contaminated fill).

2.5 Other

Various other initiatives including:

- Electric car charging points.
- Cycle racks.
- ESD Tenant Fitout Guide.
- Planting and light-coloured roof surfaces to reduce heat island effect.