

**173-199 ELIZABETH STREET
COBURG**

ENVIRONMENTAL MANAGEMENT PLAN

FOR

COBURG (VICTORIA) PTY LTD

30 NOVEMBER 2009

FILE 581B

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1. Introduction

Ark Resources has been engaged by Coburg (Victoria) Pty Ltd to prepare an Environmental Management Plan (EMP) for the proposed development at 173 Elizabeth Street, Coburg in accordance with the requirements of Schedule 10 to the Development Plan Overlay for the site.

1.1. DPO Requirements

Schedule 10 to the Development Plan Overlay includes two references which are of specific relevance to the preparation of the EMP and are reproduced below.

Environmentally Sustainable Development

- *A comprehensive, whole-of-site Environmental Management Plan demonstrating best practice and addressing, amongst other things, the following:*
 - *Energy Efficiency;*
 - *Water Sensitive Urban Design/ integrated water management;*
 - *Public realm design for access and mobility;*
 - *Measures to reduce or manage car parking demand and encourage sustainable alternative transport modes including public transport and cycling.*
- *The Environmental Management Plan must:*
 - *identify strategic or other documented sustainability targets or performance standards that the site is aiming to meet;*
 - *document the means by which the appropriate target or performance will be achieved;*
 - *identify responsibilities and a schedule for implementation, and ongoing management, maintenance and monitoring where relevant;*
 - *demonstrate that the design element, technologies and operational practices that comprise the Environmental Management Plan can be maintained over time.*

Conditions and requirements for permits

Any permit for a development must include a condition requiring the preparation of a Sustainable Design Statement (SDS) to the satisfaction of the Responsible Authority. The Sustainable Design Statement must be in accordance with the whole-of-site Environmental Management Plan forming part of the approved Development Plan. Where in the opinion of the Responsible Authority the EMP provides satisfactory detail in relation to a particular development, the Responsible Authority may waive the requirement for a SDS.

1.2. EMP Structure

In order to address the requirements of the DPO effectively, the EMP contains the following information:

- Environmentally sustainable design principles adopted to guide the preparation of the scheme for the development
- Strategic targets and performance standards adopted for the development
- Initiatives adopted to achieve the targets for key sustainable design issues
- Responsibilities for implementation and maintenance where this is a relevant consideration

- The requirements for Sustainable Design Statements to be submitted in conjunction with Planning Permit Applications

2. Sustainable Design Principles

The development plan for 173 Elizabeth Street, Coburg has been prepared with the objective of exceeding the minimum standards in the Building Code and to ensure that the project achieves industry best practice benchmarks for sustainable design and achieves the sustainable design objectives enunciated in the Moreland Planning Scheme.

Key environmentally sustainable design principles which have guided the development of the master plan are set out below:

- Minimise greenhouse emissions associated with building and transport energy use
- Manage solar access and wind to public open spaces to enhance amenity and function throughout the year
- Minimise greenhouse emissions associated with energy systems and energy supply
- Achieve sustainable water cycle management through:
 - Efficient use of potable water supplies
 - Recycling and re-use of alternative water sources
 - Integrate stormwater treatment into the design of urban spaces and landscapes
- Optimise indoor environmental quality in all buildings and structures
- Reduce the use of material resources during construction and throughout occupancy
- Provide landscaping which enhances amenity and contributes to biodiversity

The initiatives and performance targets selected to deliver the strategic objectives set out above set are detailed in section 3 of this report.

3. Sustainable Design Commitments

3.1. ENERGY EFFICIENCY

The development will incorporate the following standards and initiatives to minimise operational greenhouse emissions from buildings.

3.1.2. Solar Efficient Subdivision Layout

At least 70% of residential allotments will be aligned in accordance with the solar subdivision principles below:

- i. The long axes of lots are within the range north 20 degrees west to north 30 degrees east, or east 20 degrees north to east 30 degrees south.
- ii. Lots between 300 square metres and 500 square metres (that) are proposed to contain dwellings that are built to the boundary, the long axis of the lots should be within 30 degrees east and 20 degrees west of north.

- iii. Dimensions of lots are adequate to protect solar access to the lot, taking into account likely dwelling size and the relationship of each lot to the street.

3.1.3. Dwellings

- i. All dwellings will attain a 6 star energy rating (as defined by the BCA Part J protocol for Class 1 & Class 2 buildings)
- ii. No electric resistance heating will be installed in living areas
- iii. All heating/cooling appliances to be within 1 MEPS star of best available at the time of construction
- iv. Gas cook-tops will be installed to all dwellings.
- v. Domestic hot water will be supplied by gas boosted solar with minimum 50% solar contribution or an equivalent system which has the same greenhouse gas emissions.
- vi. Compact fluorescent lighting will be installed generally for interior and external lighting

3.1.4. Non Residential Buildings

- i. Non residential buildings will meet the standard within the Energy Efficiency component of the City of Port Phillip Sustainable Design Scorecard Non Residential

3.2. Water Sensitive Urban Design/ Integrated Water Management

Strategic Target

The development will be designed to meet the following strategic water management objectives:

- Encourage minimal water consumption and conserve potable water supplies.
- Ensure high quality urban stormwater discharges which maintain ecosystem health.
- Reduce stormwater flows downstream of the development compared to existing levels.
- Integrate stormwater management measures into the design of open spaces and streetscapes.

Initiatives & Performance Standards

The following initiatives and performance standards will be incorporated into the development.

3.2.1 Subdivision

- i. Stormwater management and treatment systems must be included in the design and landscaping of public areas in order to meet the standards of the MUSIC/STORM model developed by CSIRO for stormwater quality.

3.2.2 Dwellings

- i. Rainwater harvesting systems will be installed to provide water for irrigation and toilet flushing. Tank volumes will be specified to ensure storm water quality targets are met.

- ii. The following water efficient fittings will be specified to all dwellings
 - WELS 3 star showers (9 litres/minute)
 - WELS 4 star toilets (6/3 litre flush)
 - WELS 4 star basin taps

3.2.3 Non Residential Buildings

- i. Non residential buildings will comply with the Water component of the City of Port Phillip Sustainable Design Scorecard Non Residential

Ongoing Management and Maintenance

All storm water management infrastructure will be vested in Council and must be inspected regularly and maintained in accordance with design criteria to ensure effective and efficient ongoing operation.

3.3. Access and Mobility

3.3.1 Walking

Walking is to be encouraged as an alternative to private vehicle travel through the provision of footpaths on all Connector Streets and Access Streets. These will provide excellent connectivity throughout the site which will encourage an increase in walk trips to and from the existing bus stops on Elizabeth Street and Boyne Street along with the proposed commercial area on Elizabeth Street.

The proposed development will also seek to provide pedestrian connectivity to the existing Edgars Creek area, with its network of pedestrian paths to the west.

The proposed signalisation of Elizabeth Street and Murray Street will provide a safe crossing point of Elizabeth Street by incorporating pedestrian crossings.

The following outlines a range of actions to encourage walking as a mode choice by residents of the development.

- i. Ensure walkways within the development are well lit and signed – particularly surrounding car parking and bicycle parking areas.
- ii. Provide a convenient link to the existing / future signalised crossing of Elizabeth Street.
- iii. Ensure walkways are designed in accordance with relevant Australian Standards.
- iv. Produce a map showing safe walking routes to and from the site with times, not distances, to local facilities such as shops and bus stops.
- v. Promote / encourage participation in ‘National Walk to Work Day’.

3.3.2 Cycling

Cycling is a low cost and sustainable form of transport and is generally suitable for short trips (one to 10 kilometres). It is therefore a suitable alternative to private cars and can help to reduce congestion. The proposed development has sought to encourage cycling as an alternate means of transport by providing convenient links to the off-road bicycle paths along Edgars Creek, immediately to the east.

Safety is a key consideration for cyclists and as such, the internal road network has been designed to limit vehicle speeds, further increasing the desirability of cycling as an alternate mode of transport.

The following outlines a range of actions to encourage cycling as a mode choice by residents of the development.

- i. Provide sufficient cycle parking to meet peak needs, which is easily accessible, light, attractive and secure.
- ii. Provide cycle parking for visitors and sign it as such.
- iii. Provide a map showing more leisurely bicycle routes to work.
- iv. Promote / encourage participation in annual events such as 'Ride to Work Day'

3.3.3 Public Transport

The use of public transport is seen as a key, as such, the proposed development has sought to limit walking distances and provide good connections between each household and the existing bus route. In addition, it is proposed to provide an indented bus bay adjacent to the commercial centre along with an upgrade to the existing bus stop at that location.

The following outlines a range of actions to encourage public transport as a mode choice by residents of the development.

- i. Develop a map showing public transport routes from the site.
- ii. Improve existing public transport infrastructure such as the bus stops along Elizabeth Street.
- iii. Provide a map and associating listing advertising nearby outlets where Met cards can be purchased.
- iv. Put up a notice board with leaflets and maps showing the main public transport routes in the area.

3.3.4 Disabled Access

In order to ensure the development can cater for all user groups, it is essential that measures be implemented to accommodate residents, staff and visitors to the site with disabilities. The following actions will assist with disabled access and mobility within the site.

- i. Ensure walkways are designed in accordance with relevant Australian Standards for disabled users.
- ii. Provide disabled car parking in Mixed Use development, generally at a rate of 1 – 2 percent of the total car parking supply.

3.4. Car Parking/Sustainable Transport

It is important that the issue of travel behaviour change be considered as part of the proposed development. Examples of actions that the developer may wish to offer new residents include are outlined as follows. These actions would encourage sustainable modes of travel and would be reflective of a reduced reliance on private vehicle through the sites good connectivity to the commercial precinct, primary school and Edgars Creek corridor.

The following outlines a range of actions to reduce the car parking demand associated with the development.

- i. Provide a resource kit to all new residents providing information such as public transport facilities, bicycle facilities, maps of local areas including closest retail facilities, why the site is promoting sustainable transport, etc.
- ii. Reclaim parking spaces with further bicycle parking.
- iii. Install a display case in a central location to provide up to date information for residents.
- iv. In addition, consideration should be given to providing a reduced level of car parking for both the commercial precinct and along the residential road network.

4. SUSTAINABLE DESIGN STATEMENTS

Any permit for development of the site will require a Sustainable Design Statement (SDS) to be submitted demonstrating compliance with this EMP. The scope of requirements to be addressed by SDS for various stages of the development is limited to the following:

4.1. SDS for Planning Permit Applications to Subdivide Land

The SDS must demonstrate the following:

Solar Efficient Subdivision Layout

At least 70% of residential allotments are aligned in accordance with the solar subdivision principles below:

- i. The long axes of lots are within the range north 20 degrees west to north 30 degrees east, or east 20 degrees north to east 30 degrees south.
- ii. Lots between 300 square metres and 500 square metres (that) are proposed to contain dwellings that are built to the boundary, the long axis of the lots should be within 30 degrees east and 20 degrees west of north.
- iii. Dimensions of lots are adequate to protect solar access to the lot, taking into account likely dwelling size and the relationship of each lot to the street.

WSUD Subdivision Requirements

Stormwater management and treatment systems must be included in the design and landscaping of public areas as required to meet the standards of the MUSIC/STORM model developed by CSIRO for stormwater quality.

4.2. SDS for PPA for creation of dwellings

The SDS must demonstrate the following:

Energy Efficiency

- i. All dwellings must attain a 6 star energy rating (as defined by BCA protocol for Class 1 & Class 2 buildings)
- ii. No electric resistance heating to be installed in living areas

- iii. All heating/cooling appliances to be within 1 MEPS star of best available at the time of construction
- iv. Gas cook-tops to be installed to all dwellings.
- v. Domestic hot water will be supplied by gas boosted solar with minimum 50% solar contribution or an alternative system which has equivalent greenhouse gas emissions.
- vi. Compact fluorescent lighting must be installed generally for interior and external lighting

Water Management

- i. Rainwater harvesting systems will be installed to provide water for irrigation and toilet flushing. Tank volumes will be specified to ensure storm water quality targets are met.
- i. The following water efficient fittings will be specified to all dwellings
 - WELS 3 star showers (9 litres/minute)
 - WELS 4 star toilets (6/3 litre flush)
 - WELS 4 star basin taps

4.3. SDS for PPA for non-residential development in the Neighbourhood Hub

The SDS must demonstrate the following:

Energy Efficiency

- i. Non residential buildings must comply with the Energy Efficiency component of the City of Port Phillip Sustainable Design Scorecard Non Residential

Water Management

- i. Non residential buildings must comply with the Water component of the City of Port Phillip Sustainable Design Scorecard Non Residential

5. Conclusion

This EMP contains commitments to meet best practice standards in relation to sustainable development outcomes based on accepted sustainability rating tools for subdivision and buildings.

Key sustainable design initiatives have been prescribed for the site and individual buildings to ensure that environmentally preferable systems are specified throughout the development to deliver the outcomes nominated in this EMP.

The initiatives presented in this EMP demonstrate that *173 Elizabeth Street, Coburg* has been planned in accordance with the sustainability principles and objectives set out in the Moreland Municipal Strategic Statement and ensure that the site will be developed in accordance with the Environmentally Sustainable Development provisions set out in Schedule 10 to the Development Plan Overlay for the site.