WINDTECH

Ref: WA985-01F02(rev6)- ESD Memo

Date: November 11, 2010

To: M Projects Pty Ltd By email Pages: 9

Attn: Mr Miled Akle

Cc:

From: Adam Brownett

Re: Riverwood North Residential Renewal Project

– ESD Principles for the Proposed Concept Plan

TECHNICAL MEMO

1.0 Introduction

This memo presents a summary of the various Ecological Sustainable Design (ESD) principles that are to be incorporated into the proposed Concept Plan of the Riverwood North Residential Renewal Project.

The proposed site is bound by Kentucky Road and Washington Avenue to the south and west. Further to the east is the Riverwood Community Centre and Belmore Road, and further to the north is parklands, a community garden, and the M5 Motorway. Aerial views of the existing site area are shown in Figures 1a to 1c on the following pages.

It should be noted that a complete BASIX assessment will be undertaken at a later, more detailed design stage of the development, when the layout and floor plans of the various residential units are determined. The BASIX assessment will determine the acceptability of the efficiency of the expected water usage for the development and individual residential units, the thermal efficiency of the individual residential units, and the expected energy usage for the development and the individual units.

It is also recommended that detailed studies of the following items also be undertaken at a later, more detailed design stage of the development to verify the effectiveness and compliance of the design in these areas:

- Solar and daylight access into the various residential apartments.
- Natural cross-flow ventilation within each of the residential apartments.
- Acoustic noise levels within the residential units.

Figure 1a: Aerial View of the Existing Site (top-down view)

Figure 1b: Aerial View of the Existing Site
(view from the east, facing west)

Figure 1c: Aerial View of the Existing Site
(view from the south, facing north)

2.0 Description of the Proposed Concept Plan

The proposal is for ten multi-dwelling residential buildings, with details as described in Table 1. Open landscaped areas, gardens, and parkland are proposed within the site. New streets are also proposed within the site, and it is anticipated that some of these will be shared for vehicular and pedestrian movement. Many trees are proposed within and around the site, mostly lining the various streets within the site, and also scatted throughout the parks, gardens, and other open areas.

The site plan of the proposed Concept Plan is shown in Figure 2. Also included on this figure is the height of each proposed building, shown as the number of stories above ground.

Table 1: Description of the Various Buildings of the Concept Plan

Phase	Stage	Description
01	01	2 residential buildings located along Washington Avenue. Building A has a height ranging from 5 to 6 stories above ground, and Building B has a height ranging from 6 to 8 stories above ground.
01	02	1 residential building (Building C) located at the eastern end of the site, with a height of 4 stories above ground.
02	01	2 residential buildings located along Washington Avenue. Building A has a height ranging from 6 to 9 stories above ground, and Building B has a height of 5 stories above ground.
02	02	1 residential building (Building A) located within the north-eastern area of the site, with a height of 6 stories above ground.
02	03	2 residential buildings located within the northern area of the site. Building A has a height ranging from 5 to 8 stories above ground, and Building B has a height of 2 stories above ground.
02	04	2 residential buildings located at the north-western end of the site. Building A has a height ranging from 6 to 8 stories above ground. Building B has a height of 6 stories above ground.

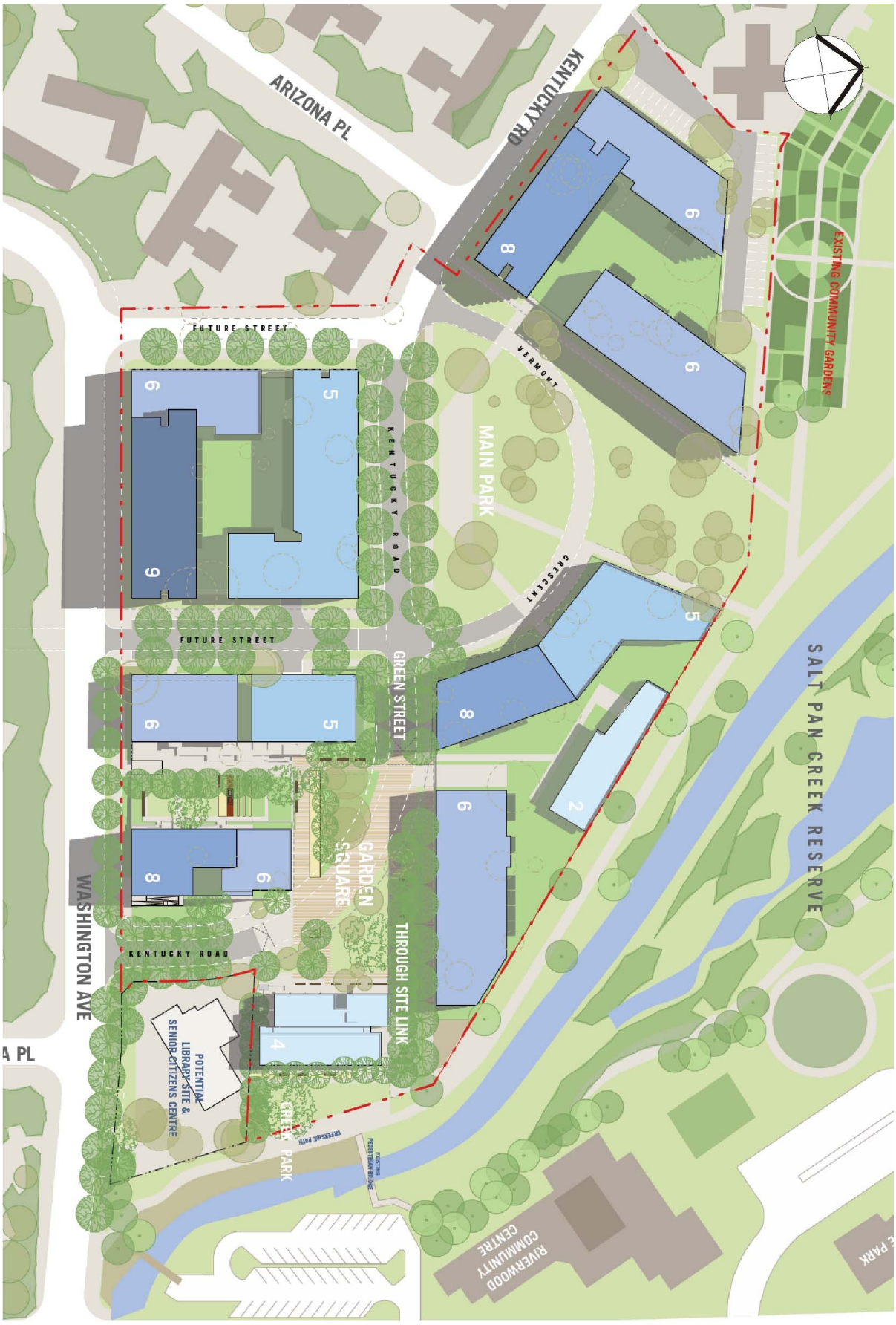


Figure 2: Proposed Site Plan of the Concept Plan

3.0 ESD Principles for the Proposed Concept Plan

The following is a summary of the various ESD principles that will be incorporated into the design, construction and ongoing operation of the proposed Concept Plan.

Energy and Thermal Efficiency

- Solar panels for the hot water systems.
- Solar shading devices to openings and louvres.
- Insulation to walls and exposed ceilings.
- Gas cooktops and electric ovens.
- Energy efficient appliances.
- Light motion sensors throughout all common areas.
- The architectural design principle is to maximise daylight access, and hence minimise the reliance on artificial lighting.
- Energy efficient ballasts.
- Energy efficient globes.
- Clothes drying areas.
- Transport – minimise car parking to encourage use of public transport, and provision of bike racks for each building.

Solar Hot Water System

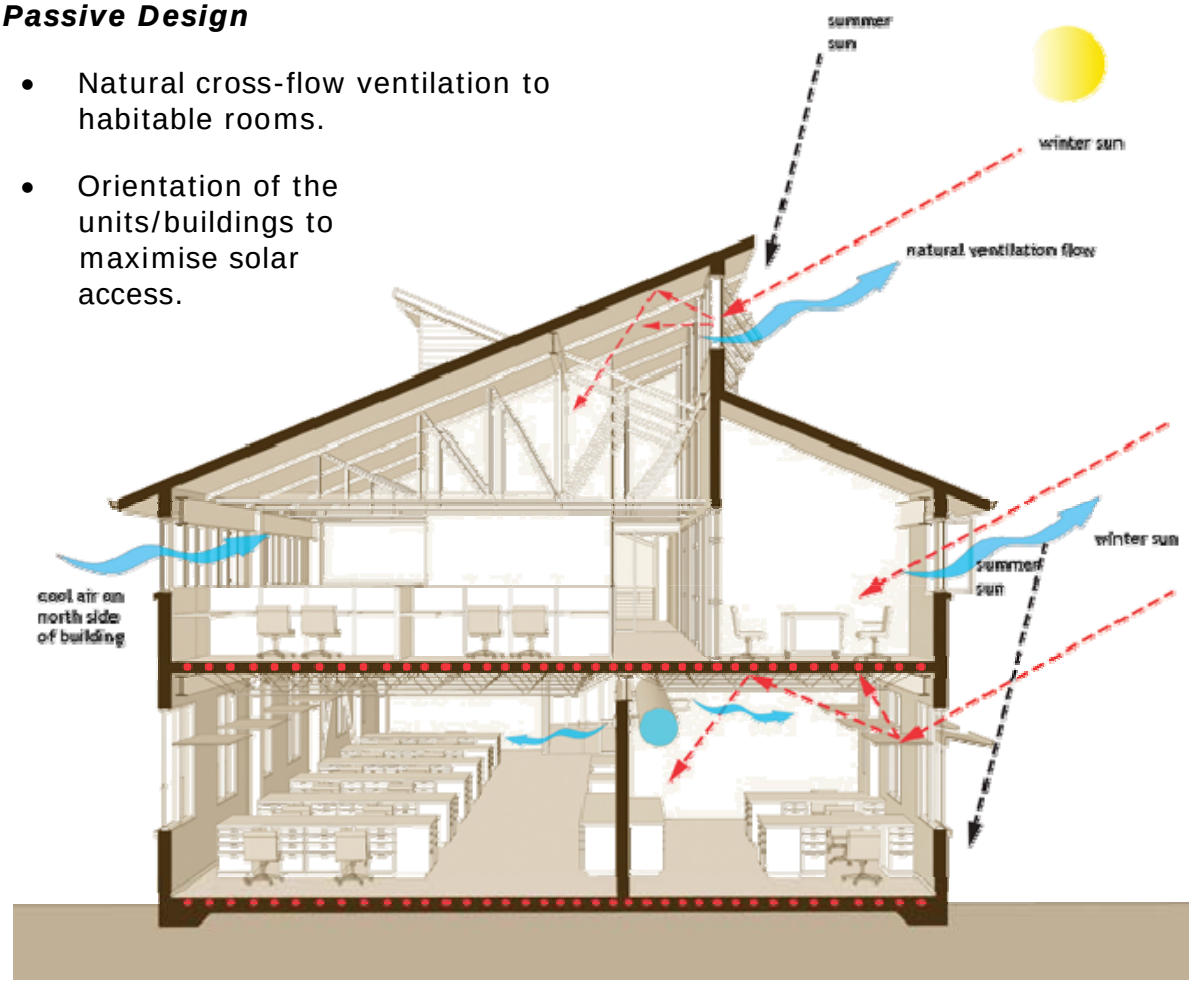
Insulation Batts

Bicycle Rack

Energy Efficient Globes and Motion Sensors

Passive Design

- Natural cross-flow ventilation to habitable rooms.
- Orientation of the units/buildings to maximise solar access.



Example of Effective Design for Natural Ventilation and Solar Access

Materials

- Feature elements made from recycled materials (ie: railways sleepers in landscaped areas, and recycled timber panels in the main lobbies).
- Low VOC content for paints and sealants.
- Reuse some of the existing bricks from the site (subject to structural integrity).
- High level of acoustic performance to be achieved with internal noise levels in habitable rooms designed not to exceed 40dB.

Recycled Timber used for Landscaping

Water

- Rainwater harvesting for WC's and irrigation.
- Water efficient appliances (minimum 3 star WELS rating).
- Dual flush toilet suite.
- Landscape using water-efficient, drought-tolerant, and indigenous species.
- Moisture sensors within irrigation system.
- First flush filtration pits for stormwater discharge.
- Individual water meters per apartment.

Dual Flush Toilet

Low water use garden

Rainwater Tank

Water Meter

Waste Management

- Worm farming facilities.
- Composting.
- Recycling of household waste.
- Recycling and sorting of construction waste.

Compost Bin

Worm Farm

With the incorporation of the abovementioned ESD principles to the design, construction and ongoing operation of the proposed Concept Plan, it is expected that the development will satisfy the requirements of BASIX for water efficiency, thermal efficiency, and energy efficiency. This will be verified by a detailed BASIX assessment of the development at a later, more detailed design stage.

Other factors such as the solar and daylight access into the various residential units, the performance of the natural cross-flow ventilation within each residential unit, and the expected acoustic noise levels for the residential units, should all be examined with separate detailed studies at a later, more detailed design stage to verify the effectiveness of the design principles.