Waterwise Development- Information Sheet

Waterwise Development Information Sheet

1. General

The Town encourages the implementation of water wise design principles within development. Being waterwise improves the sustainability of a development, reduces the impact on the environment and has the potential to lower utilities bills.

This information sheet is designed to provide information on how development can be more 'waterwise' and encourage local developments and infill projects to be accredited under Green Star, EnviroDevelopment, One Planet Living or Living Community Building Challenge. All of these programs will allow a development to become endorsed as a Waterwise Development. Information is also provided on the eTool Life Cycle Design (LCD) design and assessment tool.

2. Water Sensitive Design Principles

2.1 Increased star Water Efficiency Labelling Scheme (WELS) appliances

The Water Efficiency Labelling Scheme (WELS) is a system of easily identifiable and user friendly ratings for household appliances, supported by commonwealth and state legislation to reduce demand for high quality drinking water by informing consumers about water efficiency at the point of sale.

The Town recommends appliances installed into any new dwelling are to have a minimum WELS rating 1 star less than the highest WELS rated appliance. For example, the highest rated dishwasher on the current market may be 5 stars under the WELS. Therefore, any appliance installed into the dwelling must be 4 stars or higher under the WELS.

Information regarding the appliances recognised by this system are found on https://www.waterrating.gov.au/.

2.2 Wastewater Recycling and Harvesting

In order to promote the recycling of waste water on the site and in order to satisfy this element of this policy, the Town encourages all dwellings to install a minimum 3000L capacity rainwater tank that is plumbed to either a toilet or laundry within the dwelling; or alternatively an approved grey-water reuse system that collects grey water from the laundry and bathrooms and re-directs it for garden irrigation/ground water recharge. Additionally, water permeable paving solutions should be used as much as practicable on development sites as opposed to hardstand areas, to allow for natural infiltration of stormwater into the soil.

Greywater disposal must be in accordance with the Code of Practice for the Reuse of Greywater in WA. The Code of Practice for Greywater Reuse in WA specifies minimum areas of garden or lawn required for greywater disposal. These are summarised in Table 1 below.

No. Bedrooms	Minimum area required for greywater disposal
1 Bedroom (1 person)	20m^2
2 Bedroom (2 person)	40m^2
3 Bedroom (4 people)	80m^2
4 Bedroom (5 people)	100m^2

Table 1 – Minimum area required for greywater disposal
(NB the above land areas are calculated on the design irrigation rate of a sandy loam. These may differ depending on the soil type on the property of interest (refer to the Code of Practice for the Reuse of Greywater in WA for different soil types.)

Where the applicant does not have the minimum land areas as specified in Table 1, the use of greywater is not an option. Where this is the case, applicants should opt for the rainwater tank instead.

2.3 Landscaping

The Town acknowledges the importance deep-rooted vegetation has on aiding maintenance of ground water levels as well as stormwater run-off from areas, which are not conducive to stormwater infiltration (i.e. new development). Professionally prepared landscaping plans reflect how the landscaping responds and contributes to the sustainable design of the development.

A landscaping plan is to include all details of soft and hard surfaces, plant species and density as well as information on deep soil planting areas and rain gardens to assist in providing natural infiltration into the soil. Also refer to the Town's Landscaping Information Sheet.

The Town encourages landscaping plan for the following elements:

- Is permeable paving being used to encourage water infiltration;
- Are there rain garden present;
- Does the proposal include elements of 'xeriscaping';
- Does the proposal grade the reduced sized hardstand areas on the site towards the landscaped garden beds;
- Are the plant selections native and endemic species that once installed, will not require additional watering to maintain their health and vitality;
- Are grassed areas reduced and/or removed on site in favour of low water use mulched garden beds; and
- Does the site contemplate an area for deep soil planting of shade providing plant/tree species.

2.4 Rain Gardens

A rain garden is of comprised of native shrubs, perennials and flowers planted in a small depression to filter and treat stormwater runoff. Rain gardens can play a key role in facilitating water sensitive design as they assist runoff to infiltrate into the underlying soil, recharging the groundwater, and reducing peak flows from the site.

The recommended size of your rain garden is 2% of the existing roof cover area on your property. Refer to Table 2 below for guidance.

Roof Cover Area	Rain Garden Size
50m^2	1m^2
100m^2	2m^2
150m^2	3m^2
200m^2	4m^2

Table 2 – Examples of Rain Garden Sizes at a 2% Proportion of Roof Cover Area

Then recommended locational criteria for your rain garden is one that:

- Is on a flat site or a slight natural slope. Although rain gardens can be excavated in steeper areas with enough depth for drainage, this can be an added cost;
- Located so that they can capture and treat stormwater from impervious services. Generally, it is best practice to locate a rain garden at the lowest point of your site, as that is where stormwater collects;
- Can provide for a total rain garden depth of 600-800mm (dependent on how large your rain garden is); and
- Setback at least 450mm from the dwelling and property boundaries.

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A standard rain garden has two layers of soil. The top layer acts as the filter layer and should be comprised of a sandy loam with good drainage and a very low clay content. The bottom layer acts as the drainage layer and should be course sand. It is recommended that larger rain gardens have a third gravel drainage layer.

For further information on how to establish a successful rain garden refer to Building a raingarden: step-by-step guide Archives - Healthy Land and Water (hlw.org.au).

3. Waterwise Development Programs

The Town Strongly encourages a development to become an accredited waterwise development. There are several programs which can accredit a development, the Town has provided some brief information on some of the available programs below.

3.1 Green Star – Individual Buildings (residential, commercial, industrial) to Entire Planned Communities

- Founded in 2003 by the Green Building Council of Australia
- Internationally recognised sustainability rating system/framework for the built environment
    - Designed to set the standard for healthy, resilient and positive buildings and places
    - Australia's only national, voluntary rating system
- Changing the way Australia's built environment is designed, constructed and operated
- Developed for the Australian environment
    - Thousands of sustainable fitouts, homes, buildings and communities have been certified by Green Star around the country
- Certification from Green Star provides independent assurance that high standards have been met across a range of sustainability categories
    - Online process managed by the Green Building Council of Australia
    - Use registered certification trademarks – approved by ACCC
    - If a product/service has a certificate trademark it indicates to consumers that it meets particular standards
- Most people have probably visited a library, office, sport facility, retail centre, apartment complex, shopping centre or train station that has been certified by Green Star
    - If certified – you will see the Green Star logo, which indicates that the place is good for the environment, healthy for people and ready for the future
    - Green Star has a project directory to find a project near you: https://www.gbca.org.au/project-directory.asp?_ga=2.241137158.429451059.1643678961-1292510979.1643678961

For more information:
https://gbca-web.s3.amazonaws.com/media/documents/introducing-green-star.pdf
https://new.gbca.org.au/green-star/exploring-green-star/

3.2 - EnviroDevelopment – Multiple Dwellings to Masterplanned communities

- Scientifically-based assessment scheme/branding system
    - Independently reviews development projects
    - Awards certificates to projects with outstanding performance across four or more of the following elements: water, community, waste, energy, ecosystems and materials
    - Designed to help consumers/purchasers recognise and select environmentally sustainable homes and lifestyles

- Projects that are certified have been carefully designed to use resources responsibly and to protect the environment and offer a range of benefits to individuals, businesses and governments
    - Certified developments/projects are entitled to display EnviroDevelopment icons, which indicates that is has been designed to be more environmentally friendly

For more information:
http://envirodevelopment.com.au/
http://envirodevelopment.com.au/envirodevelopment-explained/

3.3 One Planet Living

- Vision = 'a world where we can live happily within the Earth's resources'
    - Provide a 'straightforward framework to achieve this'
- Bioregional created the One Planet Living sustainability framework based upon their learnings from the BedZED eco-village
    - Framework consists of 10 simple principles and detailed goals/guidance – developed conjunction with the WWF
- 10 One Planet Living principles:
    - Health and happiness
    - Equity and local economy
    - Culture and community
    - Land and nature
    - Sustainable water
    - Local and sustainable food
    - Travel and transport
    - Materials and products
    - Zero waste
    - Zero carbon energy
- Framework has helped a range of stakeholders achieve their sustainability objectives, including:
    - Schools and community groups
    - Businesses
    - Local authorities
    - Tourist resorts/destinations
    - Developers
    - Home builders

For more information:
https://www.bioregional.com/one-planet-living

3.4 Living Community Challenge

- Vision = 'how do we create communities that are good for everyone?'
- Framework for planning, designing and construction
    - Designed to create a symbiotic relationship between individuals and all aspects of the built environment
- Program = call to governments, planners, developers, campuses and neighbourhood groups to design communities that are connected and beautiful
- Framework organised into seven performance areas (called Petals):
    - Place Petal
    - Water Petal
    - Energy Petal
    - Health and Happiness Petal
    - Materials Petal
    - Equity Petal
    - Beauty Petal
- Work with the following stakeholders 'who want their community to thrive':
    - Developers
    - Planners
    - Higher education campuses
    - Neighbourhood associates and community groups
    - Architects and landscape architects
    - Engineers
    - Sustainability consultants
    - Municipalities and development authorities

For more information:
https://living-future.org/lcc/
https://living-future.org/lcc/basics/

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3.5 eToolLCD (also available as an app)

- Vision: “benchmarking made easy”
- A consulting service that will model your project accurately to quantify, compare, improve and certify the environmental performance (organised into 3 segments)
    - Target Setting (Initial consultation)
        - Set performance based environmental targets
        - Identify and assign strategies to reduce environmental hotspot
    - Life Cycle Design & Assessment (Development phase)
        - Quantify environmental impacts
        - Compare against relevant benchmarks
        - Identify and model improvement
        - Full reports that identify and quantify sustainability recommendations
        - Complete with a cost-analysis for the proposed recommendations
    - Certification (Completion)
        - Carry out an ISO compliant independent review
        - Complete LCA report
        - Ensure high quality user input and compliance with international standard (including Green Star, BREEAM, LEED, Infrastructure Sustainability and CEEQUAL)
- RapidLCA App
    - streamlines the sustainability assessment of lower density residential buildings
    - great application at the local government level
    - support planning requirements and decarbonise residential buildings
- Work with the following stakeholders
    - Homeowners
    - architects/designers
    - builders
    - developers of multi-billion-dollar projects

For more information: https://support.etoollcd.com/index.php/knowledgebase/