

EnviroDevelopment

Promoting Best Practice In Sustainable Urban
Development



- Overview of the Standards
 - Current Status in WA
 - Certification requirements
 - Requirements to be addressed
 - Assessment and Certification
- ❖ Questions

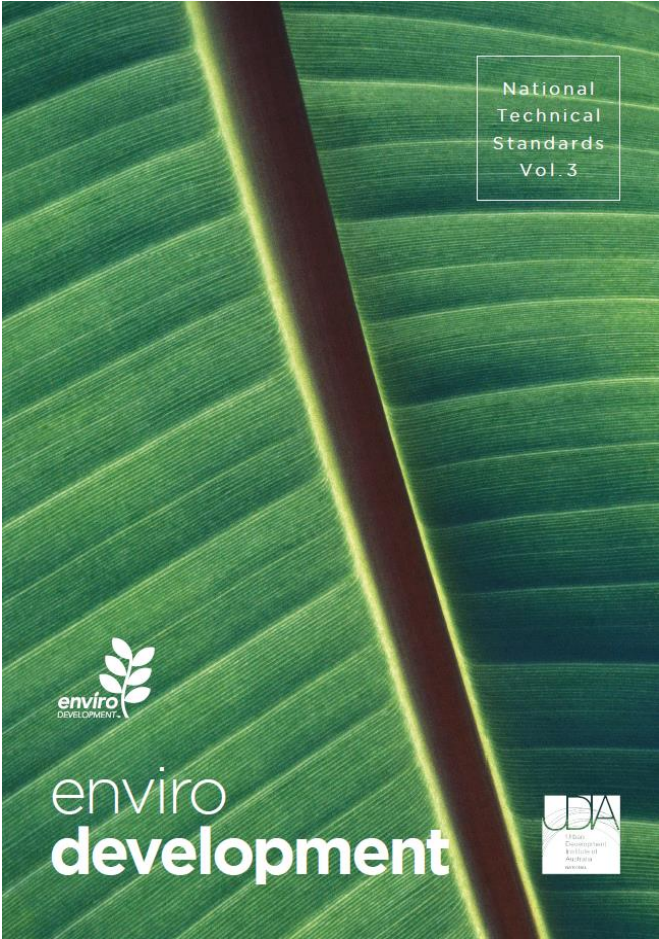
- ED certification on 6 urban developments
 - Broome North, Cockburn Coast / Shoreline, Bushmead, Parkside Walk, Port Coogee, Evermore.
- EnviroDevelopment Professional
- Contributed to initial development of ED standards (c2005)
- Working group member of national review for Version 2
- EnviroDevelopment WA - Program Audit and Review





- UDIA Developed and Endorsed
- Voluntary certification
- Developer focussed
- Projects that go beyond minimum practice compliance standards
- Targets the top (20 %) 'best-practice' projects
- Certified Projects Australia wide
 - Qld, WA, SA, Vic, NSW, ACT, N.T
- National Board
 - Governs all ED activities, including project certification and recertification
 - Members from each state

Version 3 Development Types



Masterplanned Communities
Projects primarily used for residential purposes and containing more than 1,500 dwellings.



Residential Subdivisions
Projects primarily used for residential purposes and containing less than or equal to 1,500 dwellings.



Seniors Living
Projects primarily used for seniors living or retirement living.



Multi-Unit Residential
Projects with two or more attached dwellings.



Mixed Use
Projects with a mix of commercial, residential, and retail uses.



Industrial
Projects primarily used for industrial purposes.



Retail
Projects primarily used for retail purposes.



Commercial
Projects primarily used for commercial purposes.



Education
Projects primarily used for educational purposes (e.g. primary or secondary school campuses or buildings, university campuses or buildings).



Health and Aged Care
Projects primarily used for healthcare and aged care purposes (e.g. hospitals, medical centres, aged care facilities).

CURRENT STATUS in WA



Current status in WA – Certified Projects

	Project	Developer	Date Certified	Ecosystem	Waste	Energy	Materials	Water	Community	Number
1	Broome North	DevelopmentWA / LandCorp	14 December 2018	✓		✓		✓	✓	4
2	Vivente	Richard Noble	29 June 2018	✓				✓	✓	3
3	Catalina Beach and Grove	Tamala Park Regional Council	29 May 2018	✓	✓	✓	✓	✓	✓	6
4	Shoreline (Cockburn Coast)	DevelopmentWA / LandCorp	30 June 2017	✓	✓	✓		✓	✓	5
5	Bushmead	Cedar Woods	1 May 2017	✓	✓	✓	✓	✓	✓	6
6	Parkside Walk	DevelopmentWA / LandCorp & Town of Cambridge	1 December 2016	✓	✓	✓		✓	✓	5
7	Allara	DevelopmentWA / LandCorp & Satterley	1 November 2016	✓	✓	✓	✓	✓	✓	6
8	Rosehill Waters	Handle Property Group	26 May 2016	✓	✓	✓	✓	✓	✓	6
9	Rockingham Industrial Zone	DevelopmentWA / LandCorp	30-September 2015	✓		✓		✓	✓	4
10	Vasse Dawson Residential Estate	Hanson Property & The Perron Group	24 November 2014	✓					✓	2
11	Alkimos Beach	DevelopmentWA / LandCorp & Lendlease	23 June 2014	✓	✓	✓	✓	✓	✓	6
12	Port Coogee	Fraser's	2 May 2013	✓				✓	✓	3
13	Trinity (LWP)	LWP	23 April 2012	✓					✓	2
14	The Glades at Byford (LWP)	LWP	10 December 2010	✓				✓	✓	3
15	Cygnia Cove	Richard Noble	21 September 2009	✓					✓	2
	Totals			14	6	8	4	11	14	63

Elements achieved for current and previous projects

PROJECT Name and Developer	Number of Projects	Ecosystem	Waste	Energy	Materials	Water	Community	Number
Current Certified Projects	15	15 (24%)	7 (11%)	9 (14%)	5 (8%)	12 (19%)	15 (24%)	63
Previously Certified Projects	11	8	4	6	1	7	8	34

Number of Elements achieved by project:

	Number of Elements						
	6	5	4	3	2	1	Total
Number of Current Projects	5	2	2	3	3	0	15
Previously Certified Projects	1	1	1	3	3	2	11

CERTIFICATION REQUIREMENTS



Achieve all Essential Requirements

+

4 Categories (Minimum)



Each Category has combination of:

Essential/Mandatory Actions +

Optional requirements / credits

Structured for flexibility and discretion

INNOVATION

Innovative sustainability measures which achieve an equivalent or greater sustainability benefit

Innovation credits awarded at the discretion of the National Board

Addressing the requirements

Ecosystems:

- | | |
|-----------------------|------------------|
| 1. Aquatic Ecosystems | 3. Earthworks |
| 2. Soil Health | 4. Urban Ecology |

Masterplanned Communities – Ecosystems

To achieve certification in the Ecosystems element, a project must achieve:

- **all** of the requirements under Aquatic Ecosystems (1.1);
- **all** of the requirements under Soil Health (1.2);
- **all** of the requirements under Earthworks (1.3); and
- 1.4.1 and 1.4.2 and **15** credits from 1.4.3-1.4.23 under Urban Ecology (1.4).

Multi-Unit Residential – Ecosystems

To achieve certification in the Ecosystems element, a project must achieve:

- **all** of the requirements under Aquatic Ecosystems (1.1);
- **all** of the requirements under Earthworks (1.2); and
- 1.3.1 and 1.3.2 and **six** credits from 1.3.3-1.3.18 under Urban Ecology (1.3).

Mixed Use – Ecosystems

To achieve certification in the Ecosystems element, a project must achieve:

- **all** of the requirements under Aquatic Ecosystems (1.1);
- **all** of the requirements under Soil Health (1.2);
- **all** of the requirements under Earthworks (1.3); and
- 1.4.1 and 1.4.2 and **six** credits from 1.4.3-1.4.18 under Urban Ecology (1.4).

INNOVATION

Addressing the requirements

1.4 URBAN ECOLOGY

INTENT: To ensure there is a comprehensive strategy for the *project* that retains the existing ecological attributes and functions of the site or creates new opportunities for the establishment or restoration of degraded ecosystem values and functions.

REQUIREMENT: Achieve EACH of the following:

1.4.1 Demonstrate that *environmental weeds* will not be utilised in landscaping works.

Statement from registered landscape architect/horticulturalist.

1.4.2 Reduce urban heat island effect. This could be through:

- reduction of hardstand areas;
- consideration of roof reflectiveness, material and area;
- utilisation of different materials for construction (e.g. open-grid pavement);
- incorporation of breezeways and greenways;
- provision of shading to roads, footpaths and bicycle paths;
- maximising vegetative cover; and/or
- green (vegetated) or shaded surfaces.

Evidence from environmental science professional, registered landscape architect (or related professional) and plans. *Design guidelines* should also be included if measures include requirements regarding roof colour.

REQUIREMENT: Achieve at least 15 credits from the following options: (15 from 18 options)

1.4.3 Develop a climate change risk assessment for the site which considers the following factors which are directly relevant to the *project* site including:

- flooding;
- sea level rise;
- consideration of extreme events;
- biodiversity decline; and
- bushfire hazards.

Climate change risk assessment report/statement from *appropriately qualified professional*.

1.4.4 Locate on a *brownfield site* or site that had been *significantly modified* from its natural state and had little or limited existing ecological value.

- 1 credit – $\leq 75\%$ of the site area has been *significantly modified*.
 2 credits – $> 75\%$ of the site area has been *significantly modified*.
 3 credits – *Brownfield site*.

Details of use of site prior to new development including pre-development site photos and statement from environmental professional /registered landscape architect/ related professional detailing ecological value of the site prior to development.

1.4.5 All plant species introduced to the site for landscaping *public spaces* (excluding those areas designated for turfed recreation areas), or for landscaping private areas prior to sale are *locally native*. Plant selection should consider flora that provide a diverse range of food resources to fauna. Plant selection that provides resources for limited fauna types/species is to be avoided.

- 1 credit – 90% of all plant species
 2 credits – 100% of all plant species

Landscape palette and statement from ecologist.

Note: In relevant climates, species selected specifically to allow solar access are excluded from the 90% or 100% requirement.

Addressing the requirements – Broome North

Criteria	Option addressed ? (Y/N)	Statement Addressing Requirement	Required Supporting Documentation	Supporting Document Reference
1.4 URBAN ECOLOGY				
INTENT: To ensure there is a comprehensive strategy for the project that retains the existing ecological attributes and functions of the site or creates new opportunities for the establishment or restoration of degraded ecosystem values and functions.				
REQUIREMENT: Achieve EACH of the following:				
1.4.1 Prevent the planting of invasive species as per WONS (Weeds Of National Significance), weeds on the National Environmental Heritage List (Department of Environment and Heritage), State declared species, and those incorporated in the relevant planning scheme.	☒	The Vegetation Management Plan details Management Measures, including: - Any imported soil or materials will be sourced from areas that are free from noxious weeds or significant environmental weeds; - Soil from the areas where Declared Plants and other identified, significant, environmental weeds occur will be isolated and will remain at, or as close as possible to the source location; - Any spoil containing Declared Plants or from areas where they were present will be disposed to an area which is not at threat from weed infestation or from which the weeds cannot spread (e.g. a designated landfill site); - As per Environs Kimberley's recommendation seasonal selective weed control will be included. This responds to the flush of growth promoted by the wet season. Earth works should be timed in order to prevent seed spread. - Invasive weeds are to be monitored and sprayed where and when outbreaks occur during civil / landscape works and during two year maintenance period. LSP2 Landscape Report identifies the following strategies to reduce weed impacts: - Minimising clearing where possible (during staged construction); - Where possible, using existing tracks and roads, preventing uncontrolled access to the site and minimising the number of new tracks required; - Ensuring cleared vegetation and topsoil (if contaminated with weed seed) is removed and disposed of at Shire approved dumpsites; - Ensuring all vehicles and machinery are cleaned of plant material and soil before and after entering the site (in particular when working along the perimeter of the site or in areas noted to have an invasive weed presence);	Statement from registered landscape architect / horticulturalist.	Vegetation Management Plan / 4.3 Weed Management and 4.3.2 Management Measures DDP 5.2.1 Flora and Fauna 20160725 Landscape Report SP2 - FINAL - Section 6 WEED CONTROL
1.4.2 Reduce urban heat island effect. This could be through:	☒	- reduction of hardstand areas; - consideration of roof reflectiveness, material and area; - utilisation of different materials for construction (e.g. open-grid pavement); - incorporation of breezeways and greenways; - provision of shading to roads, footpaths and bicycle paths; - maximising vegetative cover; and/or - green (vegetated) or shaded surfaces. The DDP describes a number of planning design approaches to retaining significant open space and vegetation as a means of reducing heat impacts. These include: NATURE: a variety of open space areas that combine recreation, preservation, education/interpretation and natural drainage systems, combined and linked where possible through a series of multiple use open space corridors. ENVIRONMENTAL CULTURAL CORRIDORS: a naturally vegetated corridor linking the proposed A-Class reserve adjacent to the dunal system in the west to the mangroves of Roebuck Bay. The ECC is intended to provide a habitat for flora and fauna and to provide an important cultural and community connection to 'country'. Consistent with Scheme requirements the ECC will also accommodate a low key path network to enable appropriate and managed access, as well as accommodating 'creek style' drainage swales and facilitating the movement of cooling breezes through the development area. The Street Tree Masterplan shows significant shade tree varieties along the street verges of LLP1. BROOME NORTH Front Garden Landscape Rebate Scheme and Guidelines includes requirement for planting of vegetation and shades trees.	Evidence from environmental science professional, registered landscape architect (or related professional) and plans. <i>Design guidelines</i> should also be included if measures include requirements regarding roof colour.	BroomeNorth-DDP_July2010 - Section 4.0 CONCEPT PLAN BRONB 2014-08-19 Overall District Development Plan Incorporating Amendment 1 BRONB-2013-09-11-Street-Tree-Masterplan BRONB 2014-11-03 Broome North Landscaping rebate and guidelines LC 2280 BRONB 2013-09-24 FGLP Revised Landscaping Guidelines Process
REQUIREMENT: Achieve each of the following:				
... MPlan Comm - Ecosystems		MPlan Comm - Waste	MPlan Comm - Energy	MPlan Comm - Materials
		MPlan Comm - Water		MPlan Comm - Comm

REQUIREMENTS TO BE ADDRESSED



- a. Community education 'sustainable living' program targeting residents/tenants/users (All)
- b. Thorough site analysis - prior to the planning and design phase (Eco)
- c. Sediment and erosion control - during construction and operation (Eco)
- d. Recycle and reuse all vegetative debris on site - where relevant (Eco)
- e. Solar orientation – Road / Lot orientation and layout (Energy)
- f. Reduce greenhouse gas emissions - beyond regulatory requirements (Energy)
- g. Reduce potable water consumption for irrigation (Water)
- h. Community consultation and feedback incorporated into project design (Community)

Consistent to all Development Types

Each requirement relates to a specific criteria in a Category

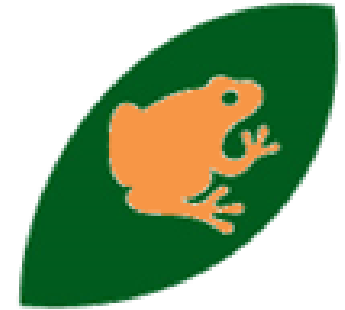


TARGET:

- Protect and enhance existing native ecosystems
- Encourage natural systems and native biodiversity
- Rehabilitate degraded sites

Criteria to be addressed and achieved:

- **Aquatic Ecosystems** – All requirements mandatory
 - Stormwater Management, Minimise pesticides, Habitat and fauna refuge
 - EP Approvals, WSUD principles
- **Soil Health** – All requirements mandatory
 - Soil quality, Reuse/recycle soil and mulch Amend soils
- **Earthworks** – All requirements mandatory
 - Site analysis, Balanced Earthworks / Street layout to it with topography of site, Erosion control, Remediate degraded and contaminated sites
- **Urban Ecology** – Two requirements mandatory + optional credits
 - Prevent invasive weeds, Reduce Urban heat island.
 - Native vegetation, Ecological corridors, Native fauna habitation / habitat trees, Bushfire mitigation, Open space contribution – credits for each 20% in excess of requirements



ECOSYSTEMS



Civil Works Construction Management Plan

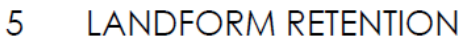
- Include specific design criteria and specifications in Civils Contract

Landscape Management Plan

- Include specific design criteria and specifications for Public Realm – Streetscape, and open space

- BB.07 **MULCHING**
- BB.07.1 Site mulch is to be used in all locations unless specified/supplied otherwise.
- BB.07.2 Supplied mulch (if required) shall be approved 'Enviromulch' (as supplied by 'Soils ain't Soils'), or approved equivalent. Submit a 3kg sample for approval prior to delivery to site.
- BB.07.3 Supply and spread mulch as follows:
- to a depth of 100mm over tubestock area and shrub areas, and
 - to a depth of 100mm to a 750mm radius to all individually planted 45 to 500 litre trees in grass areas.
- BB.07.4 Mulch shall be kept just clear of the plant stem.





It is important to maintain existing ecosystems in order to 'maintain lifestyle'. This again involves vegetation retention (flora /fauna corridors), slope retention (maintain landform integrity) and in regard to drainage, maintaining existing drainage paths and systems.



Prepared by UDLA
urban design + landscape architecture
21 JUNE 2010

For LANDCORP



TARGET:

- Healthy and active lifestyles, Community spirit,
- Local facilities, Alternative transport modes,
- Accessible and flexible design



Criteria to be addressed and achieved:

- **Essential Actions** – Vision, Community and Stakeholder engagement and consultation, Cultural heritage, CPTEP design
- + **5/6 of the following 7/8 sections:**
 1. On-going Community Engagement, Governance and Activation (mandatory criteria + 4 of 6 credits)
 2. Efficient and Accessible Transport (1 criteria mandatory + 2 of 6 credits)
 3. Engaging and Inclusive Public Realm (6 of 8 credits)
 4. Community Prosperity (1 criteria mandatory + 1 of 2 credits)
 5. Food Sensitive Design (1 criteria) (Masterplanned Communities only)
 6. Connected Communities (5 of 21 credits)
 7. Safe and Accessible Living (1 criteria)
 8. Healthy and Active Communities (2 of 5 credits)



COMMUNITY

COMMUNITY

Masterplanned Communities – Community

To achieve certification in the Community element, a project must achieve:

- **all** of the requirements under Essential Actions (6.1); and
- the requirements of **six** of the following sections:
 - Ongoing Community Engagement, Governance and Activation (6.2)
 - Sustainability Initiatives (6.3)
 - Efficient and Accessible Transport (6.4)
 - Engaging and Inclusive Public Realm (6.5)
 - Community Prosperity (6.6)
 - Food Sensitive Design (6.7)
 - Connected Communities (6.8)
 - Internet (6.9)
 - Safe and Accessible Living (6.10)
 - Healthy and Active Communities (6.11)

Industrial – Community

To achieve certification in the Community element, a project must achieve:

- **all** of the requirements under Essential Actions (6.1); and
- the requirements of **four** of the following sections:
 - Community Consultation, Planning and Development (6.2)
 - Efficient and Accessible Transport (6.3)
 - Engaging and Inclusive Public Realm (6.4)
 - Community Prosperity (6.5)
 - Local Facilities (6.6)
 - Healthy and Active Communities (6.7)

Retail – Community

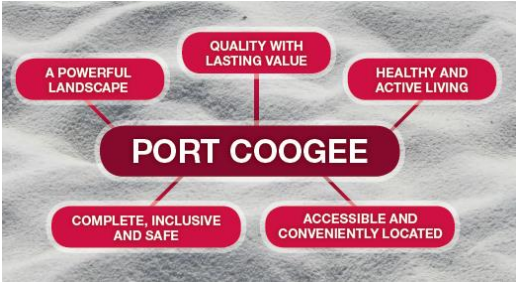
To achieve certification in the Community element, a project must achieve:

- **all** of the requirements under Essential Actions (6.1); and
- the requirements of **three** of the following sections:
 - Community Consultation, Planning and Development (6.2)
 - Efficient and Accessible Transport (6.3)
 - Engaging and Inclusive Public Realm (6.4)
 - Community Prosperity (6.5)
 - Healthy and Active Communities (6.6)

- **Vision**
 - defined environmental, economic, social sustainability and liveability goals - including measurable performance targets.
- **Stakeholder Engagement**
 - members of the existing community who may have an interest in the project – through the preparation of a community engagement plan
- **Community feedback incorporated**
 - feedback has been actively sought and considered, and incorporated where feasible and appropriate
- **Cultural heritage**
 - conserve and/or recognize and respect indigenous and post-European cultural heritage
- **CPTED**
 - project designed to encourage a safe environment, reduce crime and encourage positive interaction



Vision:



Australand's vision for Port Coogee is to create a contemporary, cosmopolitan residential seaside village, where residents and pedestrians take priority over traffic and where they and the wider community are provided with a broad range of convenience retail in a marina lifestyle.

Sustainability Strategy for Port Coogee, Australand has committed water demand by 50% and average energy consumption by 50%.



2.0 The Vision

2.1 Vision

The Cockburn Coast District Structure Plan established a Vision which remains relevant to the ongoing planning of Cockburn Coast:

“To create a vibrant, landmark destination that is connected, integrated, diverse and accessible.”

This Vision was presented to the stakeholders through the workshop process documented in the previous sessions, which has ensured that key stakeholders have been part of the journey in building upon this vision.

Ongoing Community Engagement, Governance and Activation

(2 mandatory criteria + 4 of 6 credits)

- Ongoing Community Involvement and partnerships with the broader community; and
- Ongoing engagement with the community around delivery impacts

+ 4 of ...

Grants program

Local trainees

Community development officer

Sponsor/support community groups/events

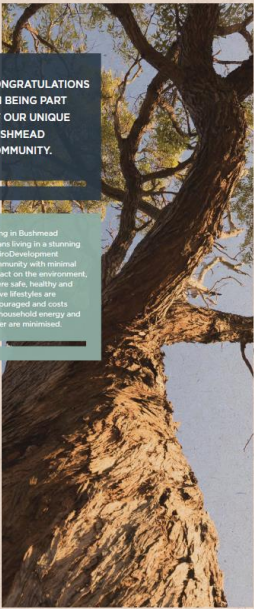
Environmental Groups

Connected community



CONGRATULATIONS ON BEING PART OF OUR UNIQUE BUSHMEAD COMMUNITY.

Living in Bushmead means living in a stunning EnviroDevelopment community with minimal impact on the environment, where safe, healthy and active lifestyles are encouraged and costs for household energy and water are minimised.



A NEW COMMUNITY LIKE NO OTHER NESTLED AMONGST TREES AND STUNNING NATIVE FLORA AND FAUNA. LIFE AT BUSHMEAD IS NOW EVEN BETTER THAN YOU IMAGINED.

As one of an exclusive few communities in Western Australia to have been awarded UDIA's 6-Leaf EnviroDevelopment Accreditation, Bushmead is now truly sustainable. Together with new residents, Cedar Woods will create a unique place in which we are proud to live. One which minimises our environmental footprint and ensures the natural features, benefits and attractions of Bushmead will remain unspoiled for generations to come.

Benefits of EnviroAccreditation:

- Future-Proof your home and investment
- Improve your well being and quality of life
- Reduce your environmental impact
- Engage in making a difference that matters
- Be rewarded with significantly reduced energy and water costs, and help support a healthier planet
- Enjoy the financial rewards that uniqueness brings

Your EnviroDevelopment - Your Bushmead forever home.

ENERGY

Homest in Bushmead will be climate responsive and solar passive in design. This will result in a more than 40% reduction in greenhouse gas emissions compared to compliance standards.

YOUR BENEFITS

- The combined energy savings for a Bushmead home can be more than 70% less than a standard home
- Your home is future proofed against rising energy costs
- Through good solar access, natural lighting and optimal positioning and design, your home will allow for greater well being and livability
- Your home is cooler in summer, warmer in winter

YOUR CONTRIBUTION

- Turn off appliances during the peak period of 3pm - 9pm
- Wash clothes on cold and dry them outdoors
- Switch appliances off at the power point

WASTE

During the development and construction phase, Cedar Woods will take significant measures to reduce waste generation and have reused or recycled 60% of construction and demolition waste in Bushmead.

YOUR BENEFITS

- More sustainable approach to waste removal and disposal
- Reduction in on- and off-site pollution during construction phase
- Promotion of recycling, composting and waste reduction in the Bushmead community

YOUR CONTRIBUTION

- Follow simple steps, reduce-reuse-recycle
- Plan your weekly shop to avoid food waste and reduce packaging
- Purchase high quality, long lasting products
- Consider reuse or recycling prior to disposal

COMMUNITY

Bushmead will bring residents together through thoughtful design to create a safe, vibrant and cohesive community.

YOUR BENEFITS

- Safe, accessible and comfortable housing and facilities
- Community cohesiveness
- Protect and celebrate the heritage of Bushmead

YOUR CONTRIBUTION

- Walk, cycle or use public transport
- Become involved in a community group or organisation
- Visit the local market, participate in sporting activities, support a local business
- Take ownership of Bushmead

WATER

Bushmead is an endorsed Waterwise Development and our homes are designed to reduce your water use and achieve significant savings.

YOUR BENEFITS

- The combined water savings for a Bushmead home can be more than 50% less than the water demand for a comparable Perth home
- Use of borewater for parks and street verge is standard practice
- A partnership has been established with The Water Corporation for a Waterwise verge program, with the installation of five Waterwise verges for purchasers

YOUR CONTRIBUTION

- Take shorter showers
- Wash your car using a bucket instead of a hose
- Fix leaky taps
- Sweep your driveway instead of using a hose

MATERIALS

Bushmead will use a minimum of 20% reused, recycled or renewable materials in construction.

YOUR BENEFITS

- Reduced carbon emissions from your construction
- Use of low emission paints, floorcoverings and adhesives create higher indoor air quality

YOUR CONTRIBUTION

- Request minimal packaging from suppliers or arrange to return or recycle packaging
- Seek out local suppliers of recycled or second-hand materials
- Share your recycling successes!

ECOSYSTEMS

Since purchasing the land in 2010 Cedar Woods has worked tirelessly to obtain planning, environmental and development approvals, to ensure Bushmead will be developed in an environmentally sensitive and sustainable manner.

YOUR BENEFITS

- A greater chance of viewing native wildlife in Bushmead
- 88 hectares of Conservation Reserve bushland
- Improved air quality during the construction phase
- A cooler micro-climate, through a reduction in the heat island effect

YOUR CONTRIBUTION

- Landscape with locally native, drought tolerant plant species
- Use materials in landscaping which encourage stormwater to seep into the ground
- Use light, reflective materials in construction to minimise the absorption of hot sunlight

Cedar Woods



Sustainability principles.

www.landcorp.com.au



Subdivision

- Designed for walking and cycling
- Mix of lot sizes and building densities
- Located next to Southern Suburbs Railway

Built Environment

- Sustainable building design requirements adopted by City of Cockburn
- Efficient appliances and fixtures recommended
- Demonstration sustainable project home

Water

- Total water cycle management
- Stormwater used for irrigation of parks
- Waterwise gardens

Community

- Community development program
- Sustainable living workshops
- Community environment centre

Ecology

- Restoration of degraded wetlands
- Retention of existing trees
- Use of recycled timber

Energy

- 75% of residential lots have passive solar orientation
- Solar hot water systems
- Solar powered park lighting



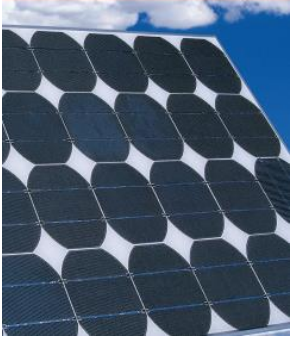
LOOK FORWARD TO GROWING SUSTAINABILITY



TURN NOW TO CLIMATE CLEVER LIVING

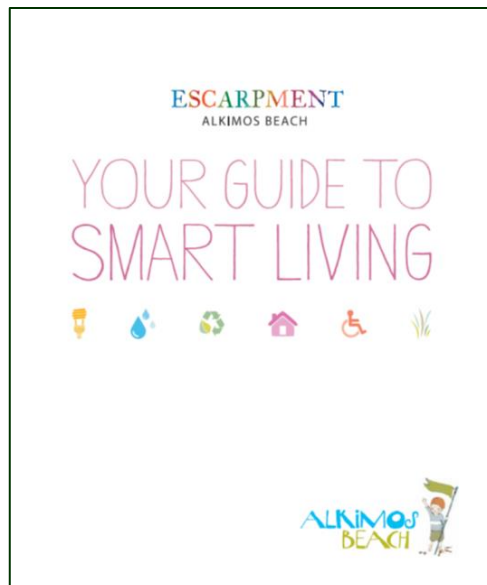
2.5K TO THE FUTURE

LOOK FORWARD TO GROWING ENERGY SAVINGS



Sustainable Living Information:

- Sustainable Living Handbook - included in Welcome Packs, along with Design Guidelines
- Information on:
 - Building design information,
 - Energy, water, waste management,
 - Living Smart workshops and End-user Behaviour Change education,
 - Government programs and incentives



Alkimos Beach is proud to present

**FREE
SUSTAINABLE LIVING
WORKSHOPS**

Get the most out of your eco-friendly design

BUILD SMART
Wednesday 24 June 2015
7.30pm – 9.00pm

St James' Anglican School, Graceful Boulevard, Alkimos

This interactive session will cover:
design guidelines, design features, approval requirements,
incentives, building materials, waste management,
efficient fixtures & appliances, water efficiency & conservation

Local residents & the general public welcome
Light refreshments provided

BOOKINGS ESSENTIAL – PLACES LIMITED
Call 1800 255 466, email alkimos.beach@lendlease.com, or
enquire at the Sales & Information Centre

Presented by 



**Smart Garden -
Smart Landscaping**

Join us at our next
Sustainable Living Workshop

Are you interested in hands on sustainable gardening and enthused about growing your own fruit, herbs and vegetables to share with your family and friends? If you want to know more about the smarts of gardening but don't know where to start then this workshop is for you. Come along to Smart Garden - Smart Landscaping, an afternoon of sustainable garden talks exclusively for residents of Alkimos Beach, Australia's first 6 Star Green Star community.

Saturday 15 October 2 - 4pm
St James' Anglican School,
Graceful Blvd, Alkimos Beach

**Sustainable Living
Your Easy Reference Guide to
Improve Your Property**



 - Use 'passive solar' design principles to keep your home naturally warm in winter & cool in summer - Orient living areas to face north to allow winter sun in, & shade windows & walls from the summer sun - Minimise eastern & western walls & windows, to reduce heat gain in the summer - Insulate roof space, walls & exposed floors - Maximise natural ventilation throughout your home	 - Plant a native garden that requires no irrigation - Install 'micro-drip' reticulation with timers & the ability to zone your garden - Harvest rainwater for use in your toilet & laundry	 - Consider how much space you need in your home – smaller homes require fewer materials - Choose building materials that are natural, renewable, or built, such as sustainable timber - Explore ways to use materials made from recycled products or easily recyclable	 - Install renewable energy systems, such as solar panels & solar water heaters - Install smart metering & automated timers to minimise energy use during hours of peak demand - Ensure lighting is energy-efficient, such as LED or compact fluorescent lights - Invest in energy-efficient appliances, including washing machines, dishwashers & ovens
 - Maximise natural light & ventilation to keep you & your home comfortable year-round - Shade your home with native trees to keep it cooler in summer - Create a vegetable patch & plant fruit trees	 - Plant a native garden that requires no irrigation - Install 'micro-drip' reticulation with timers & the ability to zone your garden - Harvest rainwater for use in your toilet & laundry	 - Look into the 'embodied energy' of your building materials, which is the total energy consumed in its manufacture, transport & installation - Think beyond your personal needs when building or renovating, as a home that can accommodate the needs of a wide variety of occupants has a longer lifespan - Design or renovate your home according to 'universal access' principles, which accommodates the needs of people of all ages & mobility levels; this includes features such as wider doors & step-free shower - Provide level pathways to the main entry & outdoors	 - Work with your neighbours & your local government to plant natives along your street verges & in your local parks; this will help establish ecological corridors & provide shade & cooling - Work with your neighbours & your local community to establish community amenities, local facilities, sports & fitness centres, & culture & arts places
 - Support local businesses, shops & service providers - Send your children in local day care & schools – it's a natural way to become involved in your community	- Include easy to access bicycle storage in your home design or renovation plan - Choose to live in an area with well-maintained pedestrian pathways & bicycle routes	- Consider the nearby public transport links such as transport hubs, bus stops & train stations when choosing a new home	

Living Key: enhancing prosperity and quality of living
Living Key makes understanding the language of
liveability and sustainability easy.
www.livingkey.com.au

COMMUNITY - Typical Focus Areas and Information Requirements

Efficient and Accessible Transport

(1 mandatory criteria + 2 of 6 credits)

- Encouragement of active transport options amongst the community

+ 2 of -

Bicycle Parking / End-of-trip facilities;
Pathways;

Transport links – Shared pathways;

Public Transport;

Community Transport;

Fuel efficient vehicles



Safe and Accessible Living

Universal Access criteria as per Livable
Housing Design Guidelines



Pull out quote goes here. Pull out quote goes here. Pull out quote goes here. Pull out quote goes here.

SAFE AND ACCESSIBLE HOUSING

Australia has an aging population which means more people with mobility issues. Universal design refers to buildings that are designed and fitted out to allow ease of access to all people of all mobility and ages. There are a number of simple design and fit-out features which if included allow ease of access and use for people with physical disabilities, mobility issues, the aged and children.

Recommendations: The following are recommended:

- Level entry: One level entry to the house from road way - may be front door or via garage;
- A ground level bathroom and toilet with easy access and min 800mm door opening;
- Hallways (step-free) shower rooms;
- Stair access feature;
- All door handles and light switches positioned in a consistent location between 900-1200mm above the floor; and
- Powerpoints installed not lower than 300mm above the floor.

WASTE MANAGEMENT

Construction and household waste to landfill is a major environmental concern impacting on the ground, water and air quality and native fauna. The more waste diverted from landfill and into recycling will be of benefit to the environment.

Requirements: To support greater recycling and reduce landfill the following are to be achieved:

- Waste separation bins - Separate and multi-use bins in kitchen for recyclables, compost and general waste.

Recommendations: In addition the following are recommended:

- Compost bins and/or worm farms for recycling food scraps and garden green waste.

Construction Waste Recycling

Recycling and reuse of excess waste materials during construction is increasingly becoming common practice by many of Perth building companies, and there are a number of reputable waste management/recycling companies in operation.

Requirements: Engage a suitably qualified and capable waste management/recycling company to recycle all allowable waste material during construction.

COMMUNITY - Typical Focus Areas and Information Requirements

Engaging and Inclusive Public Realm

Achieve 6 of ...

- Hierarchy of functions
 - Inclusiveness and connectivity
 - Benches and other seating areas
 - Locally distinct places
 - Attractive, safe and walkable street environment by planting or retaining street trees
- Multiple uses for community members
 - Space for quality social interaction
 - Play space
 - Flexibility for multiple other uses



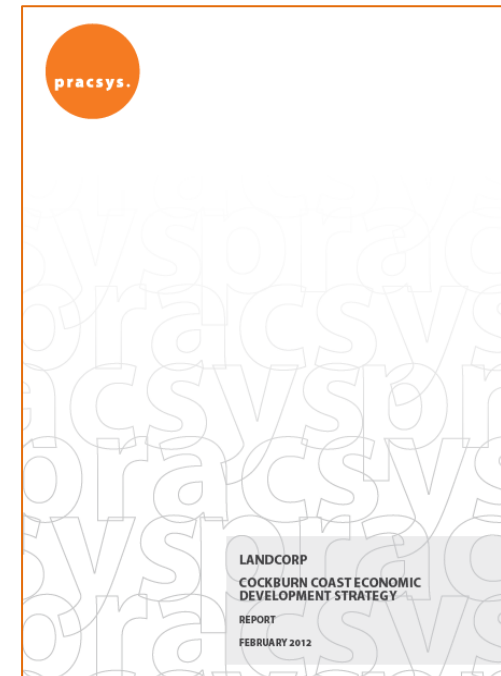
Community Prosperity

Develop a community economic/employment strategy which identifies:

- Economic goals
- Employment targets and the job balance ratio
- Commercial employment activities within the project
- Socio-economic profile of local government area
- Diversity of housing types/mix of dwelling sizes, or 10% affordable housing



Broome North
Social Directions Paper
LandCorp
September 2009



Connected Communities

Locate near at least FIVE of the following local services - 75% of residences/workplaces are within 1km by foot; or provide within two years of the first residential occupancy

Primary school; Secondary school; University; Kindergarten, preschool, childcare

Medical practice;

Chemist

Newsagent;

Grocery/corner store

Specialty stores;

Cafes and/or restaurants

Community centre;

Dog park;

Public transport hub

Emergency services;

Community accessible facilities/spaces;

Public toilets

Farmer's markets;

Community gardens



Healthy Active Communities - Achieve 2 of:

- Dwellings have access to parks within 400m,
- number of parks throughout the neighbourhood,
- active travel links,
- resting areas, entertainment space, toilets and water bubblers.
- multiple use functions



TARGET:

- Optimise energy reduction across the project beyond current regulatory requirements



Criteria to be addressed and achieved:

- Climate Responsive Design (all requirements)
 - Lots have favourable orientation, micro-climate / POS / shading,
- Peak Load (1 criteria mandatory + 1 of 2 credits)
 - Peak load reduction strategies (i.e. PV / Battery storage)
- Reduction in Greenhouse Gas Emissions (2 of 5 credits)
 - Alternative / Renewable Energy, Water heating and efficient appliances, NatHERS >6star, Building design, Behaviour Management

OR 20% reduction beyond regulatory compliance

- Community Facilities (2 criteria mandatory)
 - Community center, Swimming pool etc.)

Mixed Use / Industrial / Retail include criteria for:

- Common areas, Sub-metering, HVAC, Lift Systems, Carparks

INTENT: To ensure that the *project* is underpinned by a comprehensive strategy which considers climate responsive design to improve comfort levels for occupants.



Built Form Design Criteria

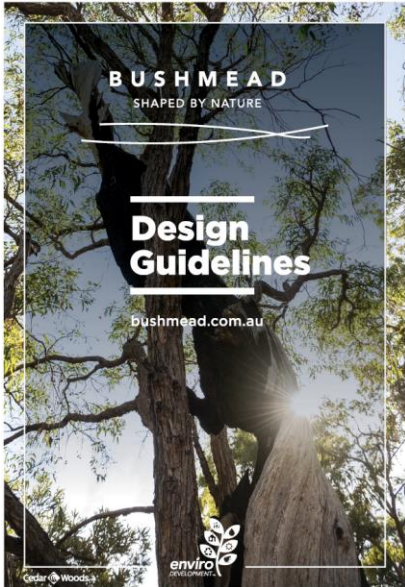
Mandate requirements for

- Energy efficiency and GHG reduction strategies
 - Climate Responsive Design for buildings
 - Renewable Energy – PV
 - HWS – Solar or Heat Pump
- Criteria to be included in contract of sale documentation for all lots



Civils and Landscape Management Specifications

- Lighting requirements for street lighting and public realm
- Specifications to be included in Civils or Landscape Management



3. SUSTAINABILITY DESIGN STANDARDS

Cedar Woods encourages homes which are efficient in energy and water. A home which has good orientation, ventilation and light will not only be more comfortable to live in, but also cheaper to run in the longer term.

These design standards work together with Cedar Woods' Sustainable Living Guide to encourage you to make smart choices to future-proof your home and ensure that it holds its value. The Sustainable Living Guide is found at www.bushmead.com.au.

The following criteria includes both Requirements and Recommendations.

REQUIREMENTS	These are the mandatory sustainable design provisions which must be addressed in the design and construction of each building.
RECOMMENDATIONS	These are optional elements which are included to show how you can achieve an even higher level of environmental sustainability.

ENERGY EFFICIENCY AND CONSERVATION

THERMAL PERFORMANCE

All residential dwellings are required to address minimum energy efficiency standards under the Building Codes of Australia (BCA). This includes achieving a minimum thermal performance rating of 6 stars under the NatHERS (Nationwide House Energy Rating Scheme).

REQUIREMENTS	Consistent with BCA requirements, all dwellings to be certified to achieve a minimum 6 star NatHERS rating.
---------------------	---

CLIMATE RESPONSIVE 'SOLAR PASSIVE' DESIGN

Designing for the local climate can enhance occupant comfort through passive design rather than relying solely on mechanical heating and cooling. This in turn will reduce running costs and have a long term benefit to our environment.

Incorporating the following fundamental design features will go a long way to ensure you have an energy efficient home that is also naturally comfortable.

Additionally, these design features will support achieving and quite likely exceeding a 6 star NatHERS rating.

REQUIREMENTS The following are to be addressed through design:	North facing living • Minimum one main living area with a major opening to have a northern aspect (with the exception of lots facing NW to NE which may have the living space with an easterly or westerly aspect).
	Shading • East and west facing rooms to be protected from summer sun. Suitable treatments may include: use of fixed shading devices such as eaves, awnings and/or performance rated (WERS) glazing.
	Cross-flow ventilation • Openings – windows and doors – to allow for breezes to flow through main habitable areas and circulation throughout the home.
RECOMMENDATION	Room zoning • Ability to zone (close-off) separate use areas for more efficient cooling and heating. Main use areas include – living, individual bedrooms and utility rooms.

BUSHMEAD
SHAPED BY NATURE



ENERGY

RENEWABLE ENERGY

Renewable Energy takes advantage of natural systems, most commonly solar radiation and wind, for the production of electrical energy and water heating, thereby greatly reducing greenhouse gas emissions and household energy costs. A 1.5kW photovoltaic (PV) system produces approximately 6-8kWh/day over a 12 month cycle, which can reduce average household energy use by up to 50%. A solar hot water system will further reduce running costs and lower greenhouse gas (GHG) emissions.

REQUIREMENTS One of the following is to be installed:	Solar Energy • Photovoltaic system – minimum 2.0kW OR • Water Heating • Solar water heater or heat pump system.
---	--

IN HOME ENERGY EFFICIENCY – FIXTURES AND APPLIANCES

Energy use within the home is a significant contributor to greenhouse gas emissions. It is also an increasing utility cost for the home owner. Careful choice of fixtures and appliances can assist in reducing both energy bills and benefit the environment.

REQUIREMENTS The following are to be achieved:	Air-conditioners • If installed, ensure the system has a high efficiency rating – i.e. a 5 star 'Energy Rating' (for heating and cooling) (or min 2.9 energy efficiency ratio for cooling) with inverter and ability to zone by use areas
	Lighting • CFL or LED lighting throughout. • Install motion sensors to outdoor lights and/or low-use rooms. (installing a min of 2 sensors). These can include front entry, garage and yard spaces, and internal rooms such as storage, pantry, walk-in-robos and toilets.
	Ceiling fans • Installed in main living areas and bedrooms Cooking • Install gas or electric ceramic, halogen or induction hot plate Appliances • Installation of high 'Energy Rating' rated appliances including dishwasher with an energy consumption of £245kWh per year.

PEAK LOAD MANAGEMENT

Peak load refers to the increased demand for electricity mainly during peak summer hours, generally between 3-8pm, which is when families are at home using multiple appliances, including air-conditioners, computers and TVs. This 'peak' demand adds significantly to greenhouse gas output and places a high demand on the electricity grid.

Strategies for peak load reduction in residential homes include implementing demand management through direct load control devices fitted to fixtures and appliances such as air conditioners and pool pumps.

REQUIREMENTS The following are to be achieved:	• Air-conditioners enabled with Direct Load Control plug-in feature • Electronic 'off-peak' timer on automated garden reticulation systems, swimming pool and water features – if installed
RECOMMENDATION	• In-home energy usage monitoring display

BUSHMEAD
SHAPED BY NATURE





BUY NOW, SAVE FOREVER

Save up to 70% on your yearly power bills with a Smart Sun Solar package.

Imagine significantly reducing your energy use, your reliance on the power grid and, ultimately, your power bills every year. If you're looking to buy and build in Waranyjarri Estate, this sunny prospect could become your reality.



INTRODUCING SMART SUN

LandCorp and Horizon Power have joined forces to deliver Smart Sun, an exciting limited edition solar power pilot program that will bring renewable energy to eligible homes in the estate.

Smart Sun is a pilot study with limited roll out. Packages are only available to six eligible established homes and six eligible future homes in Stage 10 of Waranyjarri Estate, Broome North.

For a limited time, an extra \$5,000 investment will mean your new home can be equipped with a Smart Sun Solar package worth up to \$35,000 fully installed.

Combined with the estate's environmentally sensitive design, it's anticipated you'll save around \$2,500 every year on your energy bills*.

Hurry, packages are only available to six eligible established homes and six eligible future homes in Stage 10 of Waranyjarri Estate.

Packages will be allocated on a first come, first served basis. So don't miss out!

To find out more visit landcorp.com.au/smartsun or contact Clare Cowen of Ray White Broome on 9192 2122.

*Package appliances including battery covered for 10year warranty only. Based on Horizon Power power consumption research. See landcorp.com.au/smartsun for more information.



TARGET:

- Reduce potable water use across the project beyond current regulatory measures

Criteria to be addressed and achieved:

- Reduction in Potable Water Demand (2 of 5 credits):
 - Project has non-potable 3rd-pipe supply
 - Central water storage
 - Mandated design criteria – rainwater tanks, efficient fixtures and appliances
 - Waterwise landscape packages

OR 20% reduction beyond regulatory compliance

- Irrigation – for public realm (All requirements)
 - Local native water plants
 - Waterwise irrigation
- Community Facilities (All requirements)



ED certified projects are also recognised by the Water Corporation as Waterwise Developments

Built Form Design Criteria

Mandate requirements for

- Water efficiency strategies
 - Mandated design criteria – rainwater tanks, efficient fixtures and appliances
 - Waterwise landscape
- Criteria to be included in contract of sale documentation for all lots



Civils and Landscape Management Specifications

- Include POS / Street scape waterwise requirements
- Specifications to be included in Civils or Landscape Management

WATER EFFICIENCY AND CONSERVATION

Perth is situated in dry climate zone with limited rainfall and limited supplies of fresh water. There are many things you can do to reduce your water consumption in and outside the home.

WATER EFFICIENT FIXTURES AND APPLIANCES

RECOMMENDATIONS	Waterwise Fixtures and Appliances • All tap fittings to a minimum 4 star WELS rated • All shower fittings to be minimum 3 star WELS rated 7.5L/min consumption • All toilets to a minimum 4 stars WELS rated • Efficient - high WELS Rated - appliances: washing machines and dishwashers
	Swimming Pools • Fixed retractable pool cover - where pool is installed

WATER RE-USE

Rainwater harvesting can be used to achieve greater water efficiencies. The best use of rainwater is to have the tank plumbed directly to toilet flushing and for cold water to the washing machine. Rainwater can also be used to supplement water heating and shower water.

REQUIREMENTS	Waterwise Fixtures and Appliances • Rainwater tank installed and plumbed directly to toilets and cold water laundry - For large lots (R30): Tanks with ≥3,000 litre capacity - For smaller cottage lots (R40): Tanks with ≥1,500 litre capacity.
	OR • Greywater diverter garden reticulation system installed to washing machine and/or showers • Dwellings are to be plumbed with appropriate pipework to be grey water reuse 'ready' and grey water diversion, filtration and pump system, and sub-surface irrigation pipework to be installed as per Department of Health requirements prior to occupation of the dwelling.

WATERWISE LANDSCAPING

All gardens in Bushmead are required to be sustainably landscaped and conform to waterwise garden principles. Sustainable landscaping will require the planting of indigenous plants which are native to the local area. Cedar Woods as part of the fencing and landscaping package will provide Waterwise front landscaping; however when planting the rear gardens, the following applies:

RECOMMENDATIONS	Waterwise plants • Waterwise native indigenous plants • 80% of residential landscaping is to utilise waterwise species; and • 60% of plants are to be indigenous species to the Perth Coastal Plain

PRODUCTIVE GARDENS

Residential gardens provide an ideal location for home-grown vegetable and selected fruit varieties.

RECOMMENDATIONS	• Vegetable beds - with good access to winter sun • Selected fruit trees - dwarf varieties best suited to coastal environments - e.g. lemon, lime, olive, avocado, guava • 60% of plants are to be indigenous species to the Perth Coastal Plain

Local nurseries will provide free landscaping advice and will advise on plants which meet the criteria.



WATER EFFICIENCY AND CONSERVATION

Perth is situated in dry climate zone with limited rainfall and limited supplies of fresh water. There are many things you can do to reduce your water consumption in and outside the home.

Water Efficient Fixtures and Appliances

Requirements: The following are to be achieved:

Waterwise Fixtures and Appliances:

- All tap fittings to a minimum 4 stars WELS rated;
- All showerheads to a minimum 4 stars WELS rated;
- All toilets to a minimum 4 stars WELS rated;
- Efficient - high WELS Rated - appliances: washing machines and dishwashers.

Swimming Pools

- Install a fixed retractable pool cover.

Water Re-use

Rainwater harvesting can be used to achieve greater water efficiencies. The best use of rainwater is to have the tank plumbed directly to toilet flushing and for cold water to the washing machine. Rainwater can also be used to supplement water heating and shower water.

Recommendations: The following are recommended to further reduce potable water consumption:

- Rainwater tank installed and plumbed directly to toilets and cold water laundry

Waterwise Landscaping

All gardens in Shoreline are required to be sustainably landscaped and conform to waterwise garden principles. Sustainable landscaping will require the planting of indigenous plants which are native to the local area.

Requirements: The following criteria are to be achieved:

Waterwise plants:

- Waterwise native indigenous plants:
 - 80 per cent of residential landscaping is to utilise waterwise species; and
 - 60 per cent of plants are to be indigenous species to the Perth Coastal Plain.

Productive Gardens

Residential gardens provide an ideal location for home-grown vegetable and selected fruit varieties.

Recommendations: The following are recommended:

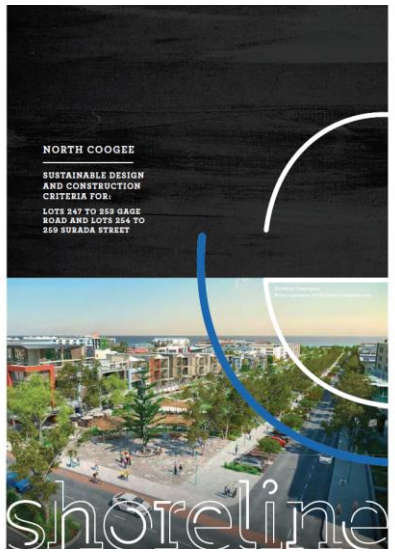
- Vegetable beds - with good access to winter sun.
- Selected fruit trees - dwarf varieties best suited to coastal environments - e.g. lemon, lime, olive, avocado or guava.

Reduction of ground level hard paving area:

The urban heat island effect can increase ambient temperatures in urban areas. Reducing the amount to hard paved surfaces through a variety of soft and permeable surfaces and providing shading can reduce localised ambient heat and create a more liveable environment.

Recommendations: The following are recommended:

- Reduction of hardstand areas through utilisation of natural pavement;
- Incorporation of breezeways and greenways; and
- Maximising vegetative cover and shading to paths and walls.



TARGET:

- Development that has implemented waste management procedures and practices
- Reduce the amount of waste to landfill and facilitates recycling



WASTE

Criteria to be addressed and achieved:

- **Waste Management Recycling Strategy** (Essential Action)
 - Identify local recyclers, secondary product manufacturers and material streams available
- **Pre-Construction, Civil Works and Construction Phase**
 - Strategies for waste minimisation practices and reuse/recycling waste / on-site recycling facility
 - **Recycle or reuse a minimum of 80% (by volume)** of demolition, land clearing and civil works materials/products (including vegetative debris) on site.
 - Excludes hazardous substances
- **Post-Construction Phase**
 - Community education on reduce, reuse and recycle, on-site compost, reuse of construction materials by occupants

Civil works:

- Specify materials recovery and recycling of land clearing and civil works materials - including vegetative debris (as per Ecosystem)



Building Construction:

- All building construction to engage a reputable Waste Management Recycling Company who can monitor and verify recycling rates
- Specify Min 80% recovery
- Criteria to be included in build form design criteria and contract of sale documentation for all lots

Post Construction Occupancy:

- Include requirements for waste recycling facilities in all lot development and operations

CONSTRUCTION WASTE RECYCLING

Recycling and reuse of excess 'waste' materials during construction is increasingly becoming common practice by many of Perth building companies, and there are a number of reputable waste management recycling companies in operation.

Waste management is also important to maintain a healthy environment, particularly given the rich bushland surrounding your new home.

REQUIREMENTS Your chosen builder is required to manage waste generated during the construction stage by addressing the following:	• Obtaining a letter of engagement from a suitably qualified and capable waste management recycling company detailing their percentage of recycling rate in weight or volume by a DER licenced facility. • The target is at least 80% of all built-form construction waste (by volume) is to be either recycled or reused.
In addition, the following criteria are to be addressed by the builder:	• Control potential for windblown waste by using appropriate solid sided storage receptacle • Following applicable local government bylaws or building permit requirements • Maintaining a clean and tidy building site that discourages illegal dumping

WASTE MANAGEMENT

Construction and household waste to landfill is a major environment concern impacting on the ground, water and air quality and native fauna. The more waste diverted from landfill and into recycling will be benefit to the environment.

RECOMMENDATIONS In addition the following are recommended:	• Compost bins and/or worm farms for recycling food scraps and garden green waste • Waste separation bins - Separate and multi-use storage bins in kitchen for recyclables, compost and general waste
--	---



Pull out quote goes here. Pull out quote goes here. Pull out quote goes here. Pull out quote goes here.

SAFE AND ACCESSIBLE HOUSING

Australia has an aging population which means more people with mobility issues. Universal design refers to buildings that are designed and fitted-out to allow ease of access to all people of all mobility's and ages. There are a number of simple design and fitout features which if included allow ease of access and use for people with physical disabilities, mobility issues, the aged and children.

Recommendations: The following are recommended:

- Level entry: One level entry in the home from road way - may be front door or via garage;
- A ground level bathroom and toilet with easy access and min 820mm door opening;
- Hobless (step-free) shower recess;
- Semi-recess basins;
- All door handles and light switches positioned in a consistent location between 900-1100mm above the floor; and
- Powerpoints installed not lower than 300mm above the floor.

WASTE MANAGEMENT

Construction and household waste to landfill is a major environmental concern impacting on the ground, water and air quality and native fauna. The more waste diverted from landfill and into recycling will be of benefit to the environment.

Requirements: To support greater recycling and reduce landfill the following are to be achieved:

- Waste separation bins - Separate and multi-use bins in kitchen for recyclables, compost and general waste.

Recommendations: In addition the following are recommended:

- Compost bins and/or worm farms for recycling food scraps and garden green waste.

Construction Waste Recycling

Recycling and reuse of excess waste materials during construction is increasingly becoming common practice by many of Perth building companies, and there are a number of reputable waste management recycling companies in operation.

Requirements: Engage a suitably qualified and capable waste management recycling company to recycle all allowable waste material during construction.

TARGET:

- Environmentally responsible materials, without significantly jeopardising the functionality or liveability of the development.

Criteria to be addressed and achieved:

1. Civil Works (3 of 4 options)
 - Roads, Services, Hard Landscape, Soft Landscape
2. Built Form:
 - Structure, Envelopes/Lining, Services, Furniture and Fixtures
3. Alternative Compliance – Lifecycle Assessment
4. Emissions



MATERIALS

Developers only:

Civil Works (3 of 4 options) OR Alternative Compliance

+ if any buildings are directly controlled/contracted by the developer, address Built Form – Structure and Envelope/Lining + 1 other

1. Roads: (95% of Roads to achieve 1 or more of 4 options):

1. Concrete >30% supplementary cement
2. Asphalt with 10% reclaimed asphalt
3. Warm mix asphalt replacing 40% hot mix
4. Recycled materials for road base or sub base



2. Services: (1 of 4 options)

1. PVC reduced through replacement with alternative/recycled materials;
2. PVC from ISO certified supplier
3. Supplementary cement and/or recycled aggregates
4. Recycled pipes

3. Hard Landscaping (1 of 3 options)

1. Reused or salvaged materials;
2. Recycled content; and/or
3. Concrete with >30% supplementary materials or recycled aggregate.

4. Soft Landscaping

1. Vegetative debris is mulched and reused; and
2. Non-contaminated topsoil reused within the site.

2.4. PV03 - PAVEMENT PROFILE 3: CREAM CRUSHED BRICK (COMPACTED)

Installation - 150mm thick cream crushed brick with 6% cement content, mixed evenly through. Machine compaction to 95% MMDD.

Material – 150mm cream crushed brick, compacted to 95% MMDD with 6% cement content.

Surface Finish – Ensure finished level does not sit proud of the surrounding surface finishes.

Workmanship - Colour, spread of aggregate and levels are all to be uniform, achieved through consistent finishing practices. Any loose material to be swept away. All final finishing should be done in the same direction. Areas of substantial patchiness will not be approved.

Recommended Supply – Cream Crushed Brick from Red Sand Supplies.



2.5. PV04 - PAVEMENT PROFILE 4: RED CRUSHED BRICK (COMPACTED)

Installation - 150mm thick red crushed brick with 6% cement content, mixed evenly through. Machine compaction to 95% MMDD.

Material – 150mm red crushed brick, compacted to 95% MMDD with 6% cement content.

CRITERION B6 – SUSTAINABILITY AND RECYCLING (ENVIRODEVELOPMENT)	WEIGHTING: 10%
Assessment Criteria: 1. Contractor is to provide options to use local recyclers, product manufacturers where they see opportunities to use recycled materials and reduce waste of their product's manufacturing. This project is seeking to achieve EnviroDevelopment Certification. See Appendix (E) EnviroDevelopment Sustainability Requirements.	

12.5.2 Crushed Recycled Concrete Sub-Base Material

The material shall consist of a uniformly blended mixture of coarse and fine aggregate resulting from the crushing of recycled concrete from construction and demolition waste. This material shall be used as sub-base material only.

Coarse aggregate (retained on 4.75 mm sieve) shall consist of hard durable angular fragments and shall not break up after wetting and drying. Foreign material content shall be limited to the values shown in the table below.

Materials – Landscape Examples



Tree reuse and crushed bricks in POS at Bushmead



Tree reuse to create a playground at The Amble Estate.



Tree reuse and crushed bricks at Jandakot Fire Station

ASSESSMENT AND CERTIFICATION



1. Review of the project development

- Identify key project initiatives (currently implemented); and
- Determine alignment with the ED requirements

2. 'Project Sustainability Strategy'

- Guide the project development – toward addressing ED requirements
- Specifications (Civil, Landscape), Built-form Design Guidelines/Criteria, Consultation / Engagement / Education

3. Project registration

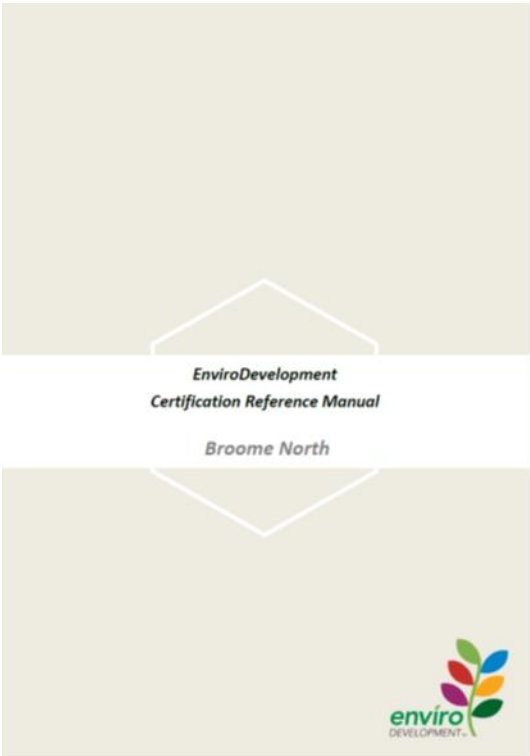
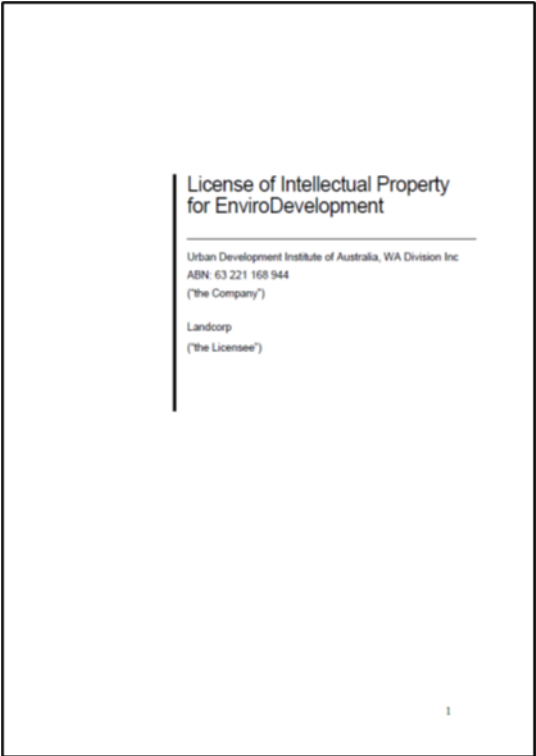
4. Technical worksheets and supporting documentation

5. Submit project for assessment and review

- Iterative

6. Certification / license and documentation

Licence Branding and Logos



- Certification license valid for 1 year / renewed annually
- Certain criteria and/or conditions to be renewed or validated

Typical Conditions

Ecosystem	Waste	Energy	Materials	Water	Community
- Education opportunity to learn about cockatoos	- Use of recycling bins	- Consultation with designer - Rebate uptake - Smart meters - Display home education - Design criteria	- Feedback on the use of materials recycling - Future building compliance with requirements	- Efficiency and monitoring	- Education on sustainable building - Community grants - Education for Sustainable Living - Educational materials provided

The logo for Enviro Development features a stylized green plant stem with several leaves. Each leaf contains a white icon: a family of three, a house, a recycling symbol, a sun, and a water drop. Below the plant, the word "enviro" is written in a bold, green, lowercase sans-serif font, and the word "DEVELOPMENT" is written in a smaller, black, uppercase sans-serif font.

enviro
DEVELOPMENT™



2 Project registration fee is deducted from the final certification fee. Project registration fee is non-refundable.



David Beyer
Principal
ActiveSustainability
0407 427 927
david@activesustainability.com.au
activesustainability.com.au