

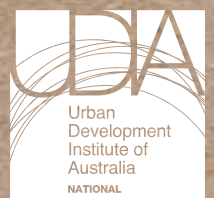


# EnviroDevelopment

National Technical Standards Version 2



Make your mark.





A photograph of a modern high-rise apartment building at dusk. The building features a mix of dark and light-colored panels and large glass windows, some of which are illuminated from within. A prominent vertical green wall is visible on the right side of the building. The background shows a city skyline with other buildings and a body of water. A large green triangular overlay covers the top left portion of the image.

Make your mark  
with EnviroDevelopment.

Botanica Residences (ARIA Property Group), certified 2013.

# Partners

EnviroDevelopment would like to acknowledge the following partners.



**HopgoodGanim**

**National Technical Standards  
Legal Partner**

HopgoodGanim has been advising on environmentally sustainable development since the introduction of federal climate change legislation. This experience perfectly positions the firm as the exclusive legal sponsor of the EnviroDevelopment National Technical Standards, for the second consecutive period, and to continue to add strategic value to the sector.



**National Technical Standards  
Masterplanned Communities Partner**

Urbis is a market leading firm providing professional services relating to the use, development, investment, design and governance of property, cities and communities. Operating throughout Australia, Asia and the Middle East we bring together experienced and specialist professionals focused on providing clients with the highest standards of service and advice.



**E2DESIGNLAB**

**National Technical Standards  
Residential Subdivision Partner**

E2DESIGNLAB is a specialist consulting business positioned at the forefront of sustainable development. Our team of respected engineers and scientists have worked closely with the land development sector, research organisations, government agencies and collaborators to lead an evidence based evolution in sustainable urban water management practice and environmental protection.



**National Technical Standards  
Seniors Living Partner**

Cardno is an ASX-200 professional services company in the infrastructure, environment and international development sectors. As an emerging global leader, Cardno is at the forefront of planning the world we live in. With expertise in the development of physical and social infrastructure, Cardno creates social, economic and environmental solutions for places and spaces that shape the future for communities around the world.



**National Technical Standards  
Multi-Unit Residential Partner**

Humes is Australia's leading provider of engineered precast concrete solutions for bridges and platforms, tunnels and shafts, stormwater and sewerage. After 100 years of manufacture we pride ourselves on delivering customised solutions to maximise installation, performance, and budgetary outcomes for our clients.



**National Technical Standards  
Mixed Use Partner**

Plantup Pty Ltd provides greenwall and greenroof systems applicable to all developments. As leaders in this emerging industry, Plantup Pty Ltd provides a range of services from consultation to complete project design development, construction and ongoing maintenance. Plantup greenwalls are 100% Australian made from 90% recycled materials.

Image: Green Square (BHC), certified 2012.



#### National EnviroDevelopment Partner

Consumer Guide Partner:



#### Queensland EnviroDevelopment Partners

Regional Event Partner:



Water Element Partner:



#### Victoria EnviroDevelopment Partners

Associate Partner:



Ecosystems Element Partner:



Energy Element Partner:



Materials Element Partner:



Water Element Partner:



Community Element Partner:



#### Western Australia EnviroDevelopment Partners

Foundation Partner:



Partner:



#### Western Australia EnviroDevelopment Supporters



# Using this document

The guide below provides useful tips on how to use this document easily and efficiently.

Seniors Living - Energy	
	
Criteria	Required Supporting Documentation
<b>3.4 LIFT SYSTEMS</b>	
<b>INTENT:</b> To reduce the energy usage of lift systems within buildings.	
<b>REQUIREMENT:</b> Achieve the following:	
<b>3.4.1</b> Where lifts are installed in the project, demonstrate consideration of lift power systems that are energy efficient and environmentally friendly. This includes but is not limited to: <ul style="list-style-type: none"><li>• use of regenerative drives;</li><li>• machine room-less elevators;</li><li>• dispatch control systems;</li><li>• intelligent automation; and/or</li><li>• stand-by modes.</li></ul>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<b>3.5 REDUCTION IN GREENHOUSE GAS EMISSIONS</b>	
<b>INTENT:</b> To reduce greenhouse gas emissions within the project.	
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options, or meet 3.5.6:	
<b>3.5.1 Alternative Energy Sources</b> Provision of solar power (or other non-polluting, renewable power source).	<i>Statement from engineer showing capacity and supporting guidance within design guidelines regarding optimal positioning for performance.</i>
<b>3.5.2 Water Heating and Appliances</b> Mandated use of: <ul style="list-style-type: none"><li>• gas hot water;</li><li>• heat pump; or</li><li>• solar hot water (gas or electric boosted).</li></ul> And, mandated use of appliances which produce less greenhouse gas emissions. This should include at a minimum: <ul style="list-style-type: none"><li>• dishwashers with a maximum energy consumption of 245kWh per annum; and</li><li>• air conditioning systems with a minimum COP of 3.20 and EER of 3.00.</li></ul>	<i>Statement of compliance from developer and design guidelines.</i>  Appliance palette including product manufacturer, number and energy star rating and/or COP and EER.
<b>3.5.3 NatHERS Rating</b> Mandated design controls within the project to achieve minimum 7 star NatHERS rating for each detached dwelling. Units achieve 6 star NatHERS rating on average.	<i>Design guidelines and supporting evidence of energy efficiency using BERS, Accurate or FirstRate5 using second generation software systems' thermal calculation method.</i>
<b>3.5.4 Reduction Through Design</b> Mandated design controls through <i>design guidelines</i> including at a minimum:  For projects located within <i>climatic zones 1-3</i> : <ul style="list-style-type: none"><li>• light coloured roofs with an absorbance value of less than or equal to 0.6;</li><li>• design to encourage breezes and circulation around dwellings;</li><li>• east and west walls have an insulation level of at least R2.0;</li><li>• shaded or appropriate glazed windows;</li><li>• use of louvres or ventilation systems to maximise ventilation for prevailing breezes; and</li><li>• ventilated living spaces.</li></ul> For projects located within <i>climatic zones 4-8</i> : <ul style="list-style-type: none"><li>• ventilated living spaces;</li><li>• minimum <i>National Construction Code</i> compliant levels of insulation; and</li><li>• thorough use of draught seals.</li></ul>	<i>Statement of compliance from developer and design guidelines.</i>

## Development Type

Identifies the relevant development type and the relevant element.

## Element

Identifies the relevant element.

## Criteria Sections and Technical Intent

Details the subject and intent of the element subsection.

## Supporting Documentation

Provides detail on the type of supporting documentation you need to respond to the criteria.

## Technical Criteria

Details the technical requirements necessary for certification.

## Development Type Colour Guide

Masterplanned Communities	Residential Subdivision	Seniors Living
Multi-Unit Residential	Mixed Use	Industrial
Retail	Education	Health and Aged Care





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# What is EnviroDevelopment?

EnviroDevelopment is a national rating tool which provides independent verification of a project's sustainability performance.

EnviroDevelopment recognises those projects that achieve exceptional sustainability outcomes and provides a point of difference in a highly competitive market. EnviroDevelopment is a powerful selling tool that can be used to clearly articulate reduced costs of living and operating expenses.

The EnviroDevelopment program is underpinned by the EnviroDevelopment National Technical Standards which sets out the criteria for assessment and supporting documentation requirements. The certification process is rigorous and designed to assess project initiatives across six areas – ecosystems, waste, energy, materials, water and community.

EnviroDevelopment is an initiative of the Urban Development Institute of Australia (Queensland) and was established to drive the delivery of more sustainable communities and spaces.

## The Technical Standards

This document sets out the criteria used to assess projects when determining whether a project has achieved the necessary requirements to be recognised as an EnviroDevelopment. The technical standards are reviewed every two to three years to ensure that the criteria remain relevant and continue to

drive the delivery of sustainable communities and spaces. The technical standards revision process is thorough, involving over 150 experts Australia-wide including developers, architects, engineers, planners, urban designers, landscape architects, economists, environmental scientists, ecologists, product suppliers, sustainability consultants and other industry bodies.

The standards are designed to be flexible, pragmatic and encourage innovation.

## The EnviroDevelopment Brand

Once certified, an EnviroDevelopment project gains access to the EnviroDevelopment logo suite. A certified project displays the icons in the 'leaves' relevant to its certification.

The EnviroDevelopment marketing logo is used by the UDIA for marketing and promoting the EnviroDevelopment program. This logo is not for use by any external party (including certified projects) unless agreed to by the UDIA (Qld).

Research commissioned by EnviroDevelopment has shown that certified projects which integrate the EnviroDevelopment brand within the project's communication strategy, are the most successful in creating awareness about the project's sustainability features and the positive impacts on end users<sup>1</sup>. Following certification, project teams receive a Marketing and Branding Guide and ongoing marketing support to optimise the value of EnviroDevelopment certification.

<sup>1</sup> - UDIA (Qld), 2006-2013.



Images: Green Square (BHC), certified 2012.

# Why EnviroDevelopment?



## Attract a premium for your project

Focus group research conducted by Resolution Research, found that 88.6% of participants would be willing to pay \$10,000-\$15,000 more to buy into an EnviroDevelopment<sup>2</sup>. One of the most appealing aspects of EnviroDevelopment certification is the potential to reduce operating costs. Achieving EnviroDevelopment certification in the areas of water and energy, has the potential to significantly lower operating costs for the end user, depending on behavioural patterns. This lower lifecycle cost has a positive effect of increasing value.



## Satisfy consumer and tenant demand

The EnviroDevelopment National Technical Standards set the criteria for projects to demonstrate sustainable development and have been informed by specially convened expert groups, research findings and, importantly, through primary research conducted on behalf of EnviroDevelopment. The Standards incorporate best practice sustainability initiatives and those considered worthwhile and valuable to end users.



## Attract third party verification

EnviroDevelopment offers third party verification of a project's sustainability credentials. Achieving certification is a means of providing credibility, using an independent rating tool, to support green initiatives. It allows reporting to key stakeholders on the delivery of sustainability-related policies and positions the project as an exemplary one in the marketplace.



## Have access to an effective communication tool

EnviroDevelopment's value as a communication tool is strengthened by an expanding range of consumer-based collateral including a *Consumer's Guide to EnviroDevelopment* and a *Sustainability Guide to Building and Renovating*. EnviroDevelopment provides a mechanism to package each of the sustainability initiatives within a project into an easily communicated brand. This assists in generating awareness and providing clarity to end users.



## Measure your project's performance

The EnviroDevelopment process enables a project team to measure the performance of a project against a set of holistic outcomes which are designed to encourage innovation. EnviroDevelopment is being used widely by developers across various portfolios as a means of assessing each project at the design phase. EnviroDevelopment certification is an effective quality assurance mechanism in assessing consistency in sustainability performance.

2 - Resolution Research, 2010.





# The Elements of EnviroDevelopment

EnviroDevelopment is separated into six key elements: ecosystems, waste, energy, materials, water and community.



## ECOSYSTEMS

### Target:

Projects that protect and enhance native ecosystems and ecological function, and rehabilitate degraded sites.

### Key Principles:

- Encourage resilient natural ecological communities and protect natural connectivity.
- Facilitate protection and rehabilitation of riparian vegetation and wetlands.
- Encourage protection (during and after construction) of existing habitats for native animals or the rehabilitation of habitats where they are no longer in existence or in a healthy state.
- Avoid water pollution and degradation of water quality in waterways and natural systems and remediate any water quality problems occurring on-site or in neighbouring areas.



## WASTE

### Target:

Projects which have implemented waste management procedures and practices to reduce the amount of waste to landfill and facilitate recycling.

### Key Principles:

- Encourage recycling of construction and demolition materials and reduce waste to landfill.
- Minimise on-site pollution during the construction phase.
- Promote the re-use of existing structures and materials.
- Promote occupancy awareness and access to recycling facilities.



## ENERGY

### Target:

Projects that implement measures to optimise energy reduction across the project beyond current regulatory requirements.

### Key Principles:

- Incorporate climate responsive design.
- Encourage use of alternative energy sources.
- Encourage the use of energy efficient appliances, lighting and HVAC systems.
- Promote use and implementation of demand and behavioural management devices and programs.



## MATERIALS

### Target:

Projects that utilise environmentally responsible materials and construction methods to lower environmental impacts of material usage.

### Key Principles:

- Incorporate use of civil work and landscaping materials from environmentally responsible sources.
- Incorporate use of built form materials from environmentally responsible sources.
- Improve indoor air quality through the choice of materials and finishes.

# The Elements of EnviroDevelopment (cont.)



## WATER

### Target:

Projects which implement measures which reduce potable water use across the project beyond current regulatory measures.

### Key Principles:

- Reduce potable water usage within dwellings or tenanted space.
- Promote the use of alternative water sources, water efficient appliances, fixtures and fittings and water efficient landscaping in private outdoor spaces.
- Encourage alternative water sources or the use of drought tolerant species to meet irrigation demand for common areas of the project.



## COMMUNITY

### Target:

Projects that encourage healthy and active lifestyles, community spirit, local facilities, alternative transport modes and accessible and flexible design that welcomes a diversity of people and adapts to their changing needs.

### Key Principles:

- Understand, engage and consider the wishes of the surrounding community and traditional owners.
- Encourage community cohesiveness and interactions through the provision of facilities, ongoing support of community social capital and development layout.
- Promote use of public transport, active transport options and healthy and active lifestyles.
- Provide access to local employment, education and services to reduce the need for regular travel beyond the local area.



Image top: Quadrant Apartments (BHC), certified 2012.

Image bottom: North Shore (Stockland), certified 2012.



# The Process

Our certification process has been developed and is routinely refined to ensure that each project's journey through the certification process is smooth, efficient and connected.

1

## Expression of Interest

- Meeting to discuss EnviroDevelopment and its applicability to the project.
- Access to EnviroDevelopment National Technical Standards.
- Overview of resources available to assist in preparation of submission.
- Copy of Application Spreadsheet and Fee Schedule.

2

## Project Registration

- *Registration fee payable.*
- Site specific workshop with developer and/or project team on the application of EnviroDevelopment and how the standards apply to the project.
- Anticipate scheduling for EnviroDevelopment Board of Management review.
- Access to EnviroDevelopment knowledge bank of sustainability initiatives.

3

## Application Submission

- Respond to any requests for further information following submission.
- Draft comments provided to applicant, with opportunity to respond / clarify prior to Board review.
- Commence early discussions on media release and announcement event.
- *Certification fee payable.*

4

## Board Review

- Respond to any requests for further clarification (if required).
- Site visit arranged.

5

## Certification Decision

- Licensing document, logos and statutory declaration provided for signing.
- Announcement event / media announcement coordinated.
- Framed EnviroDevelopment certificate provided.
- Project added to the list of EnviroDevelopment certified projects on the website.
- Supplied with EnviroDevelopment marketing material.

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## Ongoing Certification (Annual)

- Project specific support to build the project's EnviroDevelopment branding strategy and ongoing media coordination.
- Annual recertification process undertaken.
- *Recertification fee payable.*

Background Image: Highland Reserve at Jane Brook (Mirvac), certified 2012.



# Submitting an Application – What you Need to Know

## The Basics

- Each project should demonstrate compliance with the essential requirements as featured in this booklet on page 17.
- Projects should aim to meet at least four of the element as part of a certification. In special circumstances the Board of Management in the relevant State may use its discretion regarding a submission of less than four elements.
- EnviroDevelopment applications will be processed within six to eight weeks of receipt of all documentation and supporting information.

## Criteria

- If a particular criteria is not relevant to the project, mark the column 'not applicable' and provide reasoning why the criteria is not applicable or feasible in this instance. If a requirement is not addressed at all, with no reasoning provided, it will be determined by the EnviroDevelopment Board of Management that this requirement has not been met.
- Examples used within the element criteria are not exclusive and are intended as a compliance guide only.
- Each requirement is equal to one credit, unless otherwise stated.
- When the EnviroDevelopment National Technical Standards are reviewed and a revised set of standards is released, a current certified EnviroDevelopment is required to demonstrate how the project's future stages will comply with the revised EnviroDevelopment Technical Standards. The revised standards will not apply retrospectively (i.e. to those dwellings/buildings already approved/built) and applicants will not be required to undertake further baseline studies such as further ecological assessment studies. The EnviroDevelopment Board of Management shall retain the right to vary or amend the application of this requirement at its absolute discretion.

## When should I apply?

- You should make contact with your local EnviroDevelopment Coordinator as early as possible to discuss the project and its eligibility.
- Usually, EnviroDevelopment applications are processed at least three months prior to the release of the first phase of the project for sale or commencement of leasing.

- You can delay the commencement of the term of your project's EnviroDevelopment license by up to six months to coincide with a specific project milestone.
- Preliminary certification may be available to projects that choose to apply for certification prior to receiving a development approval/planning permit.
- Where a project has obtained preliminary EnviroDevelopment certification (subject to the final development approval), supplementary documentation must be submitted after the development approval/planning permit is received, highlighting any changes made since the preliminary certification.

## What do I need to provide?

An application for EnviroDevelopment certification should include:

- a completed Application Template (available from your local EnviroDevelopment Coordinator or by emailing [info@envirodevelopment.com.au](mailto:info@envirodevelopment.com.au)); and
- supporting documentation that clearly demonstrates achievements and future delivery of initiatives to satisfy the EnviroDevelopment standards.

## Costs Associated with EnviroDevelopment Certification

Registration fee – \$1,000+GST

Certification fee – based on the size of the project – ranges from \$3,000-\$17,500+GST (minus registration fee). Fee schedule available from your local EnviroDevelopment Coordinator or by emailing [info@envirodevelopment.com.au](mailto:info@envirodevelopment.com.au)

Recertification fee – 20% of the original certification fee (payable annually until project elects to let certification lapse).

## Annual Recertification Process

To renew EnviroDevelopment certification, the developer will be required to submit, four weeks before the renewal date:

- a completed renewal form;
- the renewal fee;
- signed statement; and
- all appropriate documentation detailing any changes in the project that may affect the basis upon which the EnviroDevelopment license was granted from the time of the initial certification to the end of the period of renewal.



## EnviroDevelopment Professionals

The EnviroDevelopment Professional program is designed to provide formal recognition of property development professionals who have undertaken a course in EnviroDevelopment and are part of a sustainability network. EnviroDevelopment Professionals can assist by:

- being an active member of a project team who is pursuing EnviroDevelopment certification and provide advice on how the project may be eligible for certification;
- providing assistance in coordinating an EnviroDevelopment application; and
- providing assistance in collating documentation for an EnviroDevelopment recertification.

A current directory of EnviroDevelopment Professionals is available on the EnviroDevelopment website. To enquire about becoming an EnviroDevelopment Professional, please contact the EnviroDevelopment Team at [info@envirodevelopment.com.au](mailto:info@envirodevelopment.com.au).

## EnviroDevelopment Compliance

The following information details EnviroDevelopment's compliance mechanisms and procedures to ensure the integrity of EnviroDevelopment certification and the continued compliance of certified projects.

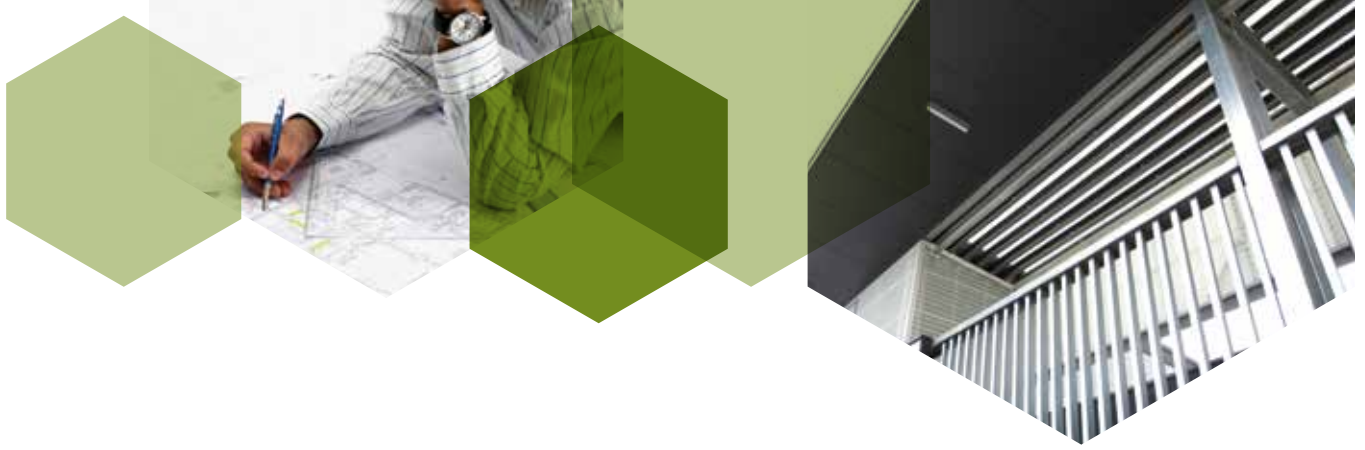
- EnviroDevelopment certified projects may be subject to random site checks.
- At the EnviroDevelopment Board of Management's discretion, further information may be requested from the project at any stage during its certification.
- Developers of EnviroDevelopment certified projects must advise the UDIA within 10 business days of any changes made, or proposed to be made, to the proposed or existing project which may affect eligibility for EnviroDevelopment certification.
- If the EnviroDevelopment Board of Management has concerns regarding compliance with the standards (or any aspect of the certification) or breach of the licensing agreement, the UDIA will advise the developer (licensee) of these concerns and request evidence of compliance within 10 business days of the notice.

- EnviroDevelopment certification may be revoked if the EnviroDevelopment Board of Management is not satisfied that the certified EnviroDevelopment is meeting the requirements and the spirit of EnviroDevelopment. In the instance of non-conformance, the licence will be revoked and the application and licensing fees will not be refunded. There may also be cause to make public statements about such non-compliance to protect the broader integrity of EnviroDevelopment.
- The developer may be declared by the EnviroDevelopment Board of Management to be ineligible for EnviroDevelopment certification for any project for a period of two years if found to breach the agreement or provide incorrect or false statements. Similarly, any third parties or consultants found to be providing substantially incorrect or false statements or evidence for the purpose of EnviroDevelopment certification may be declared by the EnviroDevelopment Board of Management to be ineligible to provide evidence for EnviroDevelopment certification for a period of two years.
- The use of the EnviroDevelopment logo system is protected and action will be taken against persons or organisations found to be fraudulently representing a project, or a component of a project, as an EnviroDevelopment, or fraudulently representing any other product as EnviroDevelopment certified or endorsed.
- EnviroDevelopment certification is not an alternative to compliance with all Federal, State and Local legislative and regulatory requirements. EnviroDevelopments must fulfil all legislative and regulatory requirements.

## Further questions?

An EnviroDevelopment Coordinator is available to answer all queries on the certification process, and will provide timely, accurate and free advice. Contact details for local EnviroDevelopment Coordinators are available via the relevant UDIA state office or at [www.envirodevelopment.com.au](http://www.envirodevelopment.com.au). Additional resources, such as case studies, a list of EnviroDevelopment Professionals and facilitation of a workshop discussion specific to a project's EnviroDevelopment application, can also be provided upon request.

*Image above:* University of the Sunshine Coast, certified 2011



## Which development type are you?

It's really important that you identify which type of development your project is before you go any further in the certification process.



### 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.



### 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).



# Essential Requirements

To be eligible for certification, each *project* must demonstrate compliance against the following essential requirements:



Establish a community education program targeting residents/tenants/users which specifically addresses:

- information regarding the waste hierarchy of reduce, reuse and recycle;
- energy and water efficiency; and
- use of environmentally responsible materials, emissions and maintenance.

Example mechanisms include interpretive signage, fact sheets and end user manuals.



Conduct thorough site analysis, prior to the planning and design phase using an *appropriately qualified professional* to identify areas of prime significance for conservation and to identify areas where clearing and/or major earthworks should not occur. The project must adequately consider and preserve significant areas based on the advice of this report.



Plan, implement and maintain effective sediment and erosion control measures during construction and operation. As a minimum, these should comply with all regulatory requirements.



Where relevant, recycle and reuse all vegetative debris on site (e.g. for landscaping or composting purposes). If not feasible, arrangements should be made for vegetative debris to be transported for reuse or disposed of by a licensed recycler or reprocessor. There should be no pit burning of green waste on site.



Demonstrate assessment of solar orientation options to provide best practice solar access opportunities.



Demonstrate how the project will reduce greenhouse gas emissions beyond regulatory requirements.



Demonstrate how the project will reduce potable water consumption for irrigation.



Demonstrate how community consultation and feedback has been incorporated into the project's design or activities.



# BUILDING A BETTER AUSTRALIA FOR FUTURE GENERATIONS

To sustain the long-term wellbeing of Australia for future generations, we need to focus on ways to support economic growth without damaging the environment.

At Urbis we support leading practice approaches to creating communities that foster social inclusion, community development, resource conservation and commercial sustainability.

//Urban Design  
//Landscape Architecture  
//Urban and Strategic Planning  
//Valuation and Advisory  
//Economics and Market Research

//Consumer Research  
//Public Policy  
//Policy Economics  
//Social Infrastructure Solutions

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Urbis are proud to partner with *EnviroDevelopment* in the ongoing refinement and application of the National Technical Standards to incrementally advance sustainable outcomes for the built and natural environment.

**URBIS.COM.AU**

**urbis**



# Masterplanned Communities



Project: Alkimos Beach

Developer: LandCorp and Lend Lease

Certification: 6 elements (ecosystems, waste, energy, materials, water, community)

Certified 2013



# 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 1.4.3-1.4.21 under Urban Ecology (1.4).

## Criteria

## Required Supporting Documentation

### 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides, herbicides and artificial fertilisers.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

**1.1.3** Where there is an ecological need, provide water features that allow habitat and refuge for fauna.

Stormwater management plan and ecological study.

### 1.2 SOIL HEALTH

**INTENT:** To ensure construction practices retain the ecological integrity of the soil to assist in achieving better environmental outcomes in the public realm.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Take soil samples in areas that are to be retained for vegetative growth to ensure an understanding of soil characteristics. For soils used for revegetation purposes, the organic content of the soil, pH and nutrient status shall be similar to that of undisturbed native soils of ecosystems that support the appropriate plant species intended for the site.

Soil or landscape management plan, including test results.

**1.2.2** Unless soil is heavily contaminated, retain in situ or stockpile and reuse all topsoil to best advantage on site. Where topsoil is minimal or absent and subsoil is deemed suitable for amendment, stockpile subsoil on site.

Evidence in plans of topsoil stockpile location and management requirements.

**Note:** Wherever possible, stockpiles should be no more than 1.5m high with maximum 1:2 batter and once stockpiling completed, covered with a green cover crop to avoid erosion, desiccation and solarisation.



Criteria	Required Supporting Documentation
<p><b>1.2.3</b> Minimise access to site by vehicles to nominated roadways or parking areas, well away from existing trees or intended public realm areas, to minimise compaction. Rip compacted soil once building works are completed. Ensure building wastes, particularly liquid wastes do not contaminate the soil.</p>	Construction management plan, identifying access locations.
<p><b>1.2.4</b> Recycle and reuse all vegetative debris on site (e.g. for topsoil augmentation or composting purposes). If onsite reuse is not feasible, arrangements should be made for green waste to be transported for reuse or disposed of at a fully licensed recycler or reprocessor. There should be no pit burning of green waste on site or disposal to landfill.</p>	Statement from developer and registered landscape architect.
<p><b>1.2.5</b> Amend, mulch and revegetate soils disturbed during construction as well as soils on the remainder of the site where the site has formerly been used for farming, forestry, industrial, commercial or urban land uses. Demonstrate that soils are suitable for intended purposes.</p>	Soil or landscape management plan.
<h2>1.3 EARTHWORKS</h2> <p><b>INTENT:</b> To reduce the disturbance of construction works on the site's natural topography and nearby waterways.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> Conduct thorough site analysis prior to planning and design to identify:</p> <ul style="list-style-type: none"> <li>• areas of prime ecological significance;</li> <li>• areas where clearing and/or major earthworks should specifically not occur;</li> <li>• potential soil issues (e.g. dispersive soils); and</li> <li>• the suitability of the site for earthworks and construction.</li> </ul> <p>The project must adequately consider and preserve significant areas based on the advice of this report.</p>	Site analysis outlining areas which require protection.
<p><b>1.3.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.</p> <p><b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p>	Statement from engineer.
<p><b>1.3.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant legislative and regulatory requirements.</p>	Erosion and sediment control plan/soil and water management plan, staging plan and <i>statement of compliance</i> from an <i>appropriately qualified professional</i> .
<p><b>1.3.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p>	Statement from engineer.
<p><b>1.3.5</b> Design and construct street layout to fit with topography with minimal disruption.</p> <p><b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability /accessibility outcomes.</p>	Pre and post civil contour maps.
<p><b>1.3.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	Contamination report and details on remediation actions.

Criteria	Required Supporting Documentation
<h2>1.4 URBAN ECOLOGY</h2> <p><b>INTENT:</b> 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.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.4.1</b> 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.</p>	Statement from registered landscape architect/horticulturalist.
<p><b>1.4.2</b> Reduce urban heat island effect. This could be through:</p> <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction (e.g. open-grid pavement);</li> <li>• incorporation of breezeways and greenways;</li> <li>• provision of shading to roads, footpaths and bicycle paths;</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	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.
<p><b>REQUIREMENT:</b> Achieve at least 15 credits from the following options:</p>	
<p><b>1.4.3</b> Develop a climate change risk assessment for the site which considers the following factors which are directly relevant to the project site including:</p> <ul style="list-style-type: none"> <li>• flooding;</li> <li>• sea level rise;</li> <li>• consideration of extreme events;</li> <li>• biodiversity decline; and</li> <li>• bushfire hazards.</li> </ul>	Climate change risk assessment report/statement from <i>appropriately qualified professional</i> .
<p><b>1.4.4</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.</p> <p><b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.</p> <p><b>3 credits</b> – <i>brownfield site</i>.</p>	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.
<p><b>1.4.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i>, or for landscaping private areas prior to sale are <i>locally native</i>. 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.</p> <p><b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.</p>	Landscape palette and statement from ecologist.
<p><b>1.4.6</b> Rehabilitate disturbed sites and degraded natural ecosystems, including areas outside the project site boundary.</p> <p><b>1 credit</b> – rehabilitated area was less than the area of public open space provided within the project.</p> <p><b>2 credits</b> – rehabilitated area was equal to the area of public open space provided within the project.</p> <p><b>3 credits</b> – rehabilitated area was greater than the area of public open space provided within the project.</p>	Evidence from environmental science professional, registered landscape architect (or related professional).
<p><b>1.4.7</b> Have bushfire mitigation and management plans which are cognisant of the principles of bushfire ecology and take appropriate management actions in a manner that avoids ecological impacts.</p>	Maintenance plan and schedule and details of arrangements.
	Bushfire management plan.





Criteria	Required Supporting Documentation
<p><b>1.4.8</b> Document and implement an appropriate weed and pest management strategy, including site rehabilitation and management of environmental weeds.</p> <p><b>1.4.9</b> Establish a native plant procurement program to assist with supply issues of local provenance stock for the purposes of landscaping of public open space areas, private land holdings and the local region.</p> <p><b>1.4.10</b> Establish and encourage vegetation communities within the project, with the incorporation of <i>threatened species</i> or communities (either local, state or national) within public realm plantings.</p> <p><b>1.4.11</b> Where appropriate and cognisant of the road hierarchy and traffic volumes, identify and use potential habitat trees within streetscape/open space areas which provide foraging opportunities and related biodiversity benefits.</p> <p><b>1.4.12</b> Implement a monitoring and maintenance plan (at least 5 years in duration) to assess fauna, flora and habitat quality and health.</p> <p><b>1.4.13</b> Ensure ecological corridors are not severed by road networks without provision of appropriate fauna crossings, bridges or tunnels (<b>1 credit</b>). Demonstrate that retained corridors link to offsite protected areas/habitat (<b>2 credits</b>).</p> <p><b>1.4.14</b> Demonstrate the consideration of fauna movements across the site and provide for safe fauna movement when adjacent to significant wildlife corridors.</p> <p><b>1.4.15</b> Provide appropriate structures and policies to facilitate native fauna habitation (e.g. fauna boxes, hollow trees, relocate felled timber to open space areas).</p> <p><b>1.4.16</b> Adopt measures to manage native fauna through maintenance of habitat and control of non-native predators.</p> <p><b>1.4.17</b> Have dog and/or cat exclusion zones to allow safe movement of native fauna, particularly in wildlife corridors.</p> <p><b>1.4.18</b> Where the project is located adjacent to a sensitive area such as a national park or nature reserve or conservation area, minimise light pollution during and post-construction to limit ecological light pollution i.e. no direct beam light should be directed beyond the site boundaries or upwards, except where it is falling directly on a surface that it is intended to illuminate (exemptions may be made for illuminated place names).</p> <p><b>1.4.19</b> Develop a site specific fauna management plan for the demolition and construction phases of the project.</p> <p><b>1.4.20</b> Demonstrate the incorporation of food bearing and/or cultural landscapes within the public realm.</p> <p><b>1.4.21</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent <i>design guidelines</i> or other protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	<p>Weed and pest management strategy and evidence of implementation.</p> <p>Details of program including establishment timeframes, landscape plan and details of operator.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and landscape plans including landscape palette.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and details of beneficiary species.</p> <p>Monitoring plan and details of timeframes and responsibility matrix.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional).</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and <i>design guidelines</i> (if relevant).</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional).</p> <p>Pest management strategy or similar.</p> <p>Evidence from environmental science professional (or related professional). <i>Design guidelines/covenants</i>.</p> <p>Lighting plans and statement from environmental science professional, registered landscape architect (or related professional).</p> <p>Fauna management plan.</p> <p>Statement from registered landscape architect/horticulturalist.</p> <p>When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.</p> <p>The ecological function of the green space pre and post development works should be articulated.</p>

# Masterplanned Communities – Waste

To achieve certification in the Waste element, a *project* must achieve:

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- 2.3.1 and **one** credit from 2.3.2-2.3.4 under Post-Construction Phase (2.3).

## Criteria

## Required Supporting Documentation

### 2.1 ESSENTIAL ACTION

**INTENT:** To identify the most suitable opportunities for recycling of resources available to the site.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. *Statement of compliance* from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

### 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the pre-construction, civil works and construction phases of the project. At a minimum, the waste management plan should meet state/territory legislation and align with relevant waste targets (where set and applicable) and include the following:

- waste generation;
- waste systems;
- minimisation strategy;
- performance/reduction targets;
- bin quantity and size;
- collection frequency;
- waste contractors; and
- monitoring and reporting including frequency and method.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.



Criteria	Required Supporting Documentation
<p><b>2.2.3</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p> <p><b>2.2.4</b> Provide guidance for builders working on site regarding waste practices. At a minimum, the following should be included:</p> <ul style="list-style-type: none"> <li>the use of skip bins rather than cages;</li> <li>maintenance of waste records;</li> <li>use of contractors who transport waste to a licensed recycling centre;</li> <li>select materials and products which minimise and/or recycle packaging; and</li> <li>design dwellings to maximise use of standard sizes of materials wherever possible.</li> </ul> <p>The above requirements are also expected to be mandated in display villages and buildings directly controlled by the developer.</p>	<p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p> <p><i>Design guidelines</i>, educational information or similar.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for end users to reduce waste going to landfill.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>2.3.1</b> Where waste infrastructure is required to be installed in <i>public spaces</i>, include separate waste receptacles for general and recyclable waste.</p>	<p>Evidence in plans and <i>statement of compliance</i> from developer and local authority.</p>
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>2.3.2</b> Provide on lot and/or on site facilities for a compost facility for use by each dwelling/facility. If individual household/facility compost bins cannot be provided, a communal facility may be provided. Compost facility should be at least one cubic metre in size and can be used to recycle a balanced mix of green material (fruit and vegetable scraps) and brown material (twigs).</p> <p><b>2.3.3</b> Ensure that there are arrangements in place (e.g. contract with appropriate organisation, body corporate procedures or local government service) to provide collection and reuse of garden/green waste.</p> <p><b>2.3.4</b> Establish and/or facilitate during development and occupancy phases, use of a recycling centre where mulch, rock, fencing, and other construction materials can be crushed and reused to provide landscaping supplies for occupants.</p>	<p>In the instance that a communal compost facility is provided, evidence in the form of an agreement or contract should be provided detailing how the responsibility and ongoing maintenance of the facility will be managed.</p> <p><i>Statement of compliance</i> from developer and local authority or service provider.</p> <p>Evidence of proposed location and timing for recycling centre.</p>



# Masterplanned Communities – Energy

To achieve certification in the Energy element, a *project* must achieve:

- **all** of the requirements under Climate Responsive Design (3.1);
- 3.2.1 under Peak Load (3.2);
- **two** credits from 3.3.1-3.3.5 or meet 3.3.6 under Reduction in Greenhouse Gas Emissions (3.3); and
- if the project includes any *community facilities*, **all** the requirements under Community Facilities (3.4).

## Criteria

## Required Supporting Documentation

### 3.1 CLIMATE RESPONSIVE DESIGN

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

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** At least 70% of lots within the project must demonstrate favourable orientation to provide best practice solar access opportunities, as well as ensure that buildings and their associated outdoor spaces are positioned on the lot in a manner that will enhance the solar amenity of the primary living areas, both internal and external.

Provide evidence that lot layouts and building orientations, including the positioning of fenestration/access points, habitable/non-habitable zones and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), overshadowing, glare and privacy. Also provide evidence that good design intentions are assured through project process by the provision of a system of education, advice, control and monitoring, including the use of building envelope plans administered through *design guidelines*.

**3.1.2** The project is designed to minimise extremities in temperatures, including negative microclimatic factors.

Statement from planner and engineer with reference to specific examples.

**3.1.3** The design of *public spaces* optimises microclimatic conditions at all times of the year.

Statement from planner and engineer with reference to specific examples.

### 3.2 PEAK LOAD

**INTENT:** To ensure that the project has adequately considered and sought to implement mechanisms to reduce peak load.

**REQUIREMENT:** Achieve the following:

**3.2.1** Demonstrate how peak load has been considered at a masterplanning level. This may include but is not limited to peak load management in *community facilities*, requirements in *design guidelines*, load limiting devices, direct load control or other hardwired inventions.

Evidence in electrical plans or *design guidelines* or similar and a *statement of compliance* from engineer or developer.

### 3.3 REDUCTION IN GREENHOUSE GAS EMISSIONS

**INTENT:** To reduce greenhouse gas emissions within the project.

**REQUIREMENT:** Achieve at least TWO credits from the following options, or meet 3.3.6:

#### 3.3.1 Alternative Energy Sources

Provision of solar power (or other non-polluting, renewable power source).

Statement from engineer showing capacity and supporting guidance within *design guidelines* regarding optimal positioning for performance.

#### 3.3.2 Water Heating and Appliances

Mandated use of:

- gas hot water;
- heat pump; or
- solar hot water (gas or electric boosted).

*Statement of compliance* from developer and *design guidelines* which include placement guidelines.

Appliance palette including product manufacturer, number and energy star rating and/or *COP* and *EER*.

And, mandated use of appliances which produce less greenhouse gas emissions. This should include at a minimum:

- dishwashers with an energy consumption of  $\leq 245\text{kWh}$  per annum; and
- air conditioning systems with a *COP* of  $\geq 3.20$  and *EER* of  $\geq 3.00$ .



Criteria	Required Supporting Documentation
<p><b>3.3.3 NatHERS Rating</b> Mandated design controls within the project to achieve minimum 7 star NatHERS rating for each dwelling.</p> <p><b>3.3.4 Reduction Through Design</b> Mandated design controls through <i>design guidelines</i> including at a minimum:</p> <p>For projects located within <i>climatic zones</i> 1-3:</p> <ul style="list-style-type: none"> <li>• light coloured roofs with an absorbance value of less than or equal to 0.6;</li> <li>• design to encourage breezes and circulation around dwellings;</li> <li>• east and west walls have an insulation level of at least R2.0;</li> <li>• shaded or appropriate glazed windows;</li> <li>• use of louvres or ventilation systems to maximise ventilation for prevailing breezes; and</li> <li>• ventilated living spaces.</li> </ul> <p>For projects located within <i>climatic zones</i> 4-8:</p> <ul style="list-style-type: none"> <li>• ventilated living spaces;</li> <li>• minimum <i>National Construction Code</i> compliant levels of insulation; and</li> <li>• thorough use of draught seals.</li> </ul> <p><b>3.3.5 Demand/Behavioural Management</b> This may include:</p> <ul style="list-style-type: none"> <li>• technology including sensors, timers etc.;</li> <li>• education using community-based social marketing and use of normative messaging, end user manual, community workshop; and/or</li> <li>• use of load monitoring devices to provide feedback (e.g. energy monitors).</li> </ul>	<p><i>Design guidelines</i> and supporting evidence of energy efficiency using BERS, Accurate or FirstRate5 using second generation software systems' thermal calculation method.</p> <p><i>Statement of compliance</i> from developer and <i>design guidelines</i>.</p> <p>Evidence in <i>design guidelines</i> or electrical plans with <i>statement of compliance</i> from engineer or developer. Evidence of end user manual and proposed structure of end user education program.</p>
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>3.3.6 Reduction through Other Means</b> Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.</p>	<p>Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements (i.e. energy balance calculations/modelling). Mechanisms to achieve reductions to be specified.</p>
<b>3.4 COMMUNITY FACILITIES</b>	
<b>INTENT:</b> To reduce energy usage in <i>community facilities</i> .	
<b>REQUIREMENT:</b> Where the project includes <i>community facilities</i> , achieve EACH of the following:	
<p><b>3.4.1</b> Where swimming pools are installed in the project, demonstrate consideration of pump systems that are energy efficient and environmentally friendly. This includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• variable speed control;</li> <li>• variable-frequency drives; or</li> <li>• variable-speed pumps.</li> </ul> <p><b>3.4.2</b> In <i>community facilities</i> utilise (where relevant):</p> <ul style="list-style-type: none"> <li>• energy efficient lighting (e.g. LED or Compact Fluorescent Lamp); and</li> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum;</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• provision of solar power (or other non-polluting, renewable power source).</li> </ul>	<p>Statement from developer.</p> <p>Statement from engineer and relevant plans.</p>

# Masterplanned Communities – Materials

To achieve certification in the Materials element, a *project* must achieve:

- the requirements under Environmentally Responsible Materials (4.1) according to the correct applicant description; and
- the requirements under Emissions (4.2) according to the correct applicant description.

## Criteria

## Required Supporting Documentation

### 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

**REQUIREMENT:** Land-Only Developers:

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in any buildings which are directly contracted by the developer within the project (e.g. community buildings/facilities, sales offices etc.), or meet 4.1.9

**Note:** If no buildings are to be directly contracted by the developer, built form requirements do not apply.

**REQUIREMENT:** Land and Built Form Developers:

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in all dwellings, or meet 4.1.9.

**REQUIREMENT:** Land and Some Built Form Developers:

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in all dwellings completed by the developer within the project, or meet 4.1.9.

### CIVIL WORKS

#### 4.1.1 Roads

Statement from supplier and supporting technical information.

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base.

#### 4.1.2 Services

Statement from quantity surveyor and/or supplier and supporting technical information.

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

#### 4.1.3 Hard Landscaping

Statement from supplier and supporting technical information.

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.





Criteria	Required Supporting Documentation
<p><b>4.1.4 Soft Landscaping</b></p> <p>Throughout the project:</p> <ul style="list-style-type: none"> <li>(a) any vegetative debris from the site is mulched and reused; and</li> <li>(b) any non-contaminated topsoil is stockpiled and reused within the site.</li> </ul>	Statement from landscape architect, including details of quantities, uses and attributes.
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate;  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated.</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials;</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and/or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	Statement from quantity surveyor and/or supplier and supporting technical information.
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	Statement from supplier and supporting technical information.

Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>• ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>• ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (kgCO<sub>2</sub>e/occupant/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.	
<b>Land-Only Developers:</b>	
<ul style="list-style-type: none"> <li>i) Meet the requirements in any buildings which are directly contracted by the developer within the project (e.g. community buildings/facilities, sales offices etc.).</li> <li>ii) Provide explicit wording and guidance in <i>design guidelines</i> regarding the use of low emission paints, sealants and adhesives and the related health benefits.</li> </ul>	
<b>Land and Built Form Developers:</b>	
<ul style="list-style-type: none"> <li>i) Meet the requirements across the entire project, including all dwellings.</li> </ul>	
<b>Land and Some Built Form Developers:</b>	
<ul style="list-style-type: none"> <li>i) Meet the requirements in all dwellings completed by the developer within the project.</li> <li>ii) Provide explicit wording and guidance in <i>design guidelines</i> regarding the use of low emission paints, sealants and adhesives and the related health benefits.</li> </ul>	
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are E0 rated.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.



## Masterplanned Communities – Water

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

- **two** credits from 5.1.1-5.1.5 or meet 5.1.6 under Reduction in Potable Water Demand (5.1);
- **all** of the requirements under Irrigation Requirements (5.2); and
- if the project includes any *community facilities*, **all** the requirements under Community Facilities (5.3).

### Criteria

### Required Supporting Documentation

## 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce household *potable water* consumption.

**REQUIREMENT:** Achieve at least **TWO** credits from the following options, or meet 5.1.6:

**5.1.1** Project is connected to a non-potable water supply which is plumbed to dwellings for outdoor and toilet use at a minimum.

Statement from engineer and relevant plans.

**5.1.2** Project mandates through *design guidelines*, covenants or encumbrances rainwater tanks on lots over 300m<sup>2</sup> which are plumbed to dwellings for outdoor and laundry use at a minimum.

*Design guidelines* and details of building design review processes.

**5.1.3** Project includes a central storage facility which captures either stormwater or rainwater for reuse within dwellings. At a minimum, recycled rainwater or stormwater should be plumbed to dwellings for outdoor and toilet use.

Statement from engineer and relevant plans.

**5.1.4** Project mandates through *design guidelines* or similar water efficient fixtures. At a minimum mandated fixtures must include:

- showerheads that use ≤6 litres per minute; and
- taps to bathrooms, kitchen and laundry that use ≤6 litres per minute.

*Design guidelines* and details of building design review processes.

And, project mandates through *design guidelines*, water efficient appliances which include, where installed, a dishwasher with a water consumption of ≤14 litres per use.

**5.1.5** Project provides dedicated water efficient landscaping packages for private open space/outdoor areas. Water efficient landscaping packages must include the provision of at least 70% drought tolerant species.

Landscape palette and statement from landscape architect.

### ALTERNATIVE COMPLIANCE

**5.1.6** Reduce *potable water* usage within the project (excluding common area irrigation requirements captured in 5.2.1) by at least 20% more than required under relevant Federal and State government regulatory means.

*Design guidelines* and worked calculations showing how initiatives will achieve at least 20% reduced *potable water* usage compared to regulatory compliance.



Criteria	Required Supporting Documentation
<h2>5.2 IRRIGATION REQUIREMENTS</h2> <p><b>INTENT:</b> To reduce the use of <i>potable water</i> for irrigation purposes in the public realm.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>5.2.1</b> Use drought tolerant species which have no irrigation requirements for the public realm.</p> <p>Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through:</p> <ul style="list-style-type: none"> <li>stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);</li> <li>plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);</li> <li>greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);</li> <li>rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or</li> <li>use of underground water sources.</li> </ul> <p><b>Note:</b> the following exemptions may apply:</p> <ul style="list-style-type: none"> <li><i>potable water</i> used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover);</li> <li><i>potable water</i> used to irrigate non-commercial food production gardens; and</li> <li><i>potable water</i> used for playing/sports fields.</li> </ul>	<p>Landscape palette and statement from landscape architect.</p> <p>Certification by engineer or local government engineer or development assessment officer or other <i>appropriately qualified professional</i> (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)</p> <p>If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.</p>
<p><b>5.2.2</b> Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage.</p>	<p>Irrigation plan or statement from landscape architect regarding irrigation methods.</p>
<p><b>5.2.3</b> Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.</p>	<p>Statement from registered landscape architect.</p>
<p><b>5.2.4</b> Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.</p>	<p>Statement from registered landscape architect.</p>
<h2>5.3 COMMUNITY FACILITIES</h2> <p><b>INTENT:</b> To reduce <i>potable water</i> usage in <i>community facilities</i>.</p> <p><b>REQUIREMENT:</b> Where the project includes <i>community facilities</i>, achieve EACH of the following:</p>	
<p><b>5.3.1</b> Where an outdoor swimming pool is included within the project, a pool blanket is included.</p>	<p>Statement from developer.</p>
<p><b>5.3.2</b> Where a swimming pool is included within the project, ensure there is a backwash minimisation system in place (e.g. cartridge filter, filter utilising cyclone technology, oversized sand filter, centrifugal/pre-filter device, backwash recycling system or similar).</p>	<p>Statement from developer.</p>
<p><b>5.3.3</b> In <i>community facilities</i> utilise (where relevant):</p> <ul style="list-style-type: none"> <li>waterless urinals;</li> <li>taps with water usage of ≤6 litres per minute; and</li> <li>dishwashers with a water consumption of ≤14 litres per use.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>connect to a non-potable water source for indoor non-drinking water uses.</li> </ul>	<p>Statement from engineer and relevant plans.</p>



## 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)
  - Efficient and Accessible Transport (6.3)
  - Engaging and Inclusive Public Realm (6.4)
  - Community Prosperity (6.5)
  - Food Sensitive Design (6.6)
  - Connected Communities (6.7)
  - Safe and Accessible Living (6.8)
  - Healthy and Active Communities (6.9)

### Criteria

### Required Supporting Documentation

## 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability and liveability goals including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Consultation/stakeholder engagement strategy.

**6.1.3** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

**6.1.4** Consider and appropriately conserve and/or recognise and respect indigenous and post-European cultural heritage. Cultural heritage investigations should be conducted in accordance with the minimum standards outlined in the Burra Charter (1999) using the services of appropriately qualified professionals.

Evidence of recognition and protection or considerate reuse of cultural heritage sites or structures (and artefacts) if applicable and in keeping with advice from traditional owners, long-term locals or historical advisors.

This could include:

- evidence of voluntary liaison with traditional owner, if such a group can be identified, and the consideration of Indigenous cultural values in the processes, design and construction of the project; and
- evidence of consideration of significant post European cultural heritage, such as retaining significant trees, fences, old machinery and structures of significance, interpretive signage, research of site history and publication, promotion and incorporation in the design and naming of elements.

**6.1.5** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between residents/employees and other local people using the area, according to Crime Prevention Through Environmental Design (CPTED).

Evidence in plans, and statement from planner.

Criteria	Required Supporting Documentation
<b>6.2 ONGOING COMMUNITY ENGAGEMENT, GOVERNANCE AND ACTIVATION</b> <b>INTENT:</b> To ensure the project adequately plans and delivers a structure and framework which supports ongoing community cohesion and resilience as a socially sustainable community. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.2.1</b> Establish a structure or framework for ongoing community involvement and establish ongoing partnerships with the broader community. The framework should include some of the activities listed in 6.2.2-6.2.7 and commence within one year of the occupation of the first dwelling and continue through until the last stage. The framework should also include a plan to encourage the establishment of a self-sufficient community group by project completion.	Evidence of structure and framework including a list of measurables and delivery timeframes.
<b>REQUIREMENT:</b> Achieve at least FOUR credits from the following options, or identify other actions appropriate to the local context:	
<b>6.2.2</b> Facilitate community grants programs.	Details of programs including financial investment and timeframes.
<b>6.2.3</b> Sponsor, facilitate and/or provide local community groups/events. May be within the project or supporting the surrounding community.	Details including schedule, purpose and nature of the sponsorship.
<b>6.2.4</b> Involve local trainees in construction activities.	Details including arrangements and planned activities and timeframes.
<b>6.2.5</b> Engage with local environmental groups/catchment organisations for ongoing community-based environmental restoration and maintenance activities.	Details including arrangements and planned activities and timeframes.
<b>6.2.6</b> Provide or support an existing resource (e.g. <i>community development officer</i> or program) to facilitate and support community development.	Details including responsibilities, level of commitment and hours of commitment.
<b>6.2.7</b> Demonstrate the strategies and actions which are creating and facilitating a connected community.	Details including timeframes and structure.
<b>6.3 EFFICIENT AND ACCESSIBLE TRANSPORT</b> <b>INTENT:</b> To reduce reliance on private cars as the primary mode of transport. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.3.1</b> Demonstrate encouragement of active transport options amongst the community.	Details of programs including timeframes.
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.3.2 Bicycle Parking</b> Provide bicycle parking at all community facilities and retail/commercial businesses within the project at a rate of one space per 500sqm of GFA. Place bicycle parking in public view and easily accessible from the road.  Where an activity centre or similar is located within the project, end of trip facilities must be provided using the Queensland Transport's End-of-Trip Facilities for Bicycle Riders Guide (or similar) as a guide.	Evidence in plans, and statement from masterplanner and developer stating how the requirements have been met.





Criteria	Required Supporting Documentation
<p><b>6.3.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathways running wholly in public spaces (including streets and open spaces), directly connecting residential and commercial areas to local facilities and providing links between areas. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.</p>	<p>Evidence in plans, and statement from landscape architect, developer and engineer stating how the requirements have been met.</p>
<p><b>6.3.4 Active Transport Linkages</b> Provide shared pathways for both walking and cycling. The width of the pathway should be a minimum of 3m and designed appropriately for the anticipated level of pedestrian and bicycle use, and the likely speed of cyclists and the required clearances.</p> <p>OR</p> <p>Provide pathways on both sides of all roads within the project.</p>	<p>Evidence in plans and/or statement on how the requirements have been met.</p>
<p><b>6.3.5 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within:</p> <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> <p>The stop/station must be serviced by at least ten services per weekday (by the time the buildings within the project are 50% occupied) to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.</p>	<p>Evidence of existing transport location/s and frequency of service. If public transport stop is proposed, details of proposal to local government and negotiations to date should be provided.</p> <p>Evidence including arrangements and frequency.</p> <p>Evidence including distribution and eligibility.</p>
<p><b>6.3.6 Community Transport</b> Provide a community transport network such as car share, car pool or community minibus to facilities.</p>	<p>Evidence including the location, arrangements and provider of scheme.</p>
<p><b>6.3.7 Low-Emitting and Fuel-Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles at all <i>community facilities</i> and retail/commercial businesses within the project for 5% of the total vehicle parking capacity of each site.</p>	<p>Evidence including the location and number of parks.</p>

Criteria	Required Supporting Documentation
<b>6.4 ENGAGING AND INCLUSIVE PUBLIC REALM</b> <b>INTENT:</b> To ensure the delivery of high quality public realm which provides an attractive, inclusive, non-discriminatory and safe environment for the community to meet, engage and recreate. <b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:	
<b>6.4.1</b> Demonstrate a hierarchy of functions within the public realm.	<i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.
<b>6.4.2</b> The public realm is designed to allow multiple uses for community members, including children, the elderly and disabled people with regard taken to safety, comfort and security. Provide appropriate seating, shading, accessible toilets and water bubblers.	<i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.
<b>6.4.3</b> The design of the public realm takes account of the role it plays in terms of inclusiveness and connectivity within and external to the project.	<i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.
<b>6.4.4</b> The design plans indicate how space for quality social interaction has been considered in the design of streets and open areas and choice of material throughout the project and its surroundings.	<i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.
<b>6.4.5</b> Benches and other seating areas are located in places with consideration of the sun, shade, wind and rain.	<i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.
<b>6.4.6</b> Create locally distinct places which connect people through place and strongly reflect the local identity of the area through the design of social spaces.	<i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.
<b>6.4.7</b> Demonstrate the flexibility of the public realm for multiple other uses (e.g. water sensitive urban design, conservation, business enterprises, healthy active living, etc).	<i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.
<b>6.4.8</b> Provide an attractive, safe and walkable street environment by planting or retaining street trees at 12-25 metre intervals, or demonstrate intervals appropriate to the chosen tree species and region to ensure maximum shade for pedestrians.	Evidence in landscape plans and statement from registered landscape architect.



Criteria	Required Supporting Documentation
<h2>6.5 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.5.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>• economic goals and priorities for the community;</li> <li>• employment targets and the job balance ratio;</li> <li>• activities to be provided within the project (e.g. retail, industrial, commercial or community based);</li> <li>• socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>• how the project will contribute to the host local government area's socio-economic profile; and</li> <li>• net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	<p><i>Statement of compliance</i> from developer and evidence of community economic/employment strategy and implementation plan.</p>
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>6.5.2</b> Provide significant diversity of housing types including a mix of dwelling sizes (e.g. number of bedrooms) and/or densities of housing.</p>	<p>Evidence in plans and statement from developer including lot mix, and densities.</p>
<p><b>6.5.3</b> Provide at least 10% of houses, blocks of land or house and land packages are <i>affordable</i> and are interspersed with other housing, not in a group together or isolated from other housing.</p>	<p>Market analysis and house, land and/or house and land package prices.</p>
<h2>6.6 FOOD SENSITIVE DESIGN</h2> <p><b>INTENT:</b> To provide opportunities for the local community to participate in producing or purchasing local food.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.6.1</b> Demonstrate a strategy for the delivery of permanent and viable growing spaces and/or related facilities which includes:</p> <ul style="list-style-type: none"> <li>• an engagement strategy for partnerships;</li> <li>• distribution methodology;</li> <li>• infrastructure provision; and</li> <li>• maintenance and ownership arrangements.</li> </ul> <p><b>Note:</b> Credit is also given where a project is contributing (either financial or human resources) towards the establishment or ongoing maintenance of an appropriate facility outside the project boundary.</p>	<p>Statement from developer and registered landscape architect.</p>



Criteria	Required Supporting Documentation
<b>6.7 CONNECTED COMMUNITIES</b> <b>INTENT:</b> To provide serviced communities with facilities to meet their needs and reduce the number of private car trips required. <b>REQUIREMENT:</b> Locate near (such that 75% of residences/workplaces are within 1km by foot) or provide within two years of the first residential occupancy at least FIVE of the following local services. <b>Note:</b> (i) Local services should be co-located near public transport stops and pathways. (ii) Where the project claims local services which have fixed capacities (e.g. childcare, schools etc.) the project should engage with providers to ascertain capacity constraints and whether the local services are adequately equipped to cater for future growth.	
<b>6.7.1</b> Newsagent	Evidence in plans, including walking distances.
<b>6.7.2</b> Grocery/corner store	
<b>6.7.3</b> Primary school	
<b>6.7.4</b> Secondary school	
<b>6.7.5</b> University	
<b>6.7.6</b> Kindergarten, preschool, or childcare	
<b>6.7.7</b> Medical practice	
<b>6.7.8</b> Chemist	
<b>6.7.9</b> Specialty stores	
<b>6.7.10</b> Cafes and/or restaurants	
<b>6.7.11</b> Community centre	
<b>6.7.12</b> Dog park	
<b>6.7.13</b> Public transport hub	
<b>6.7.14</b> Bank or cash machine	
<b>6.7.15</b> Post office	
<b>6.7.16</b> Emergency services (including rural fire brigade, ambulance, police)	
<b>6.7.17</b> Communication centre or business centre	
<b>6.7.18</b> Community accessible facilities/spaces (e.g. rooms, public areas, education centres)	
<b>6.7.19</b> Public toilets	
<b>6.7.20</b> Farmer's markets	
<b>6.7.21</b> Community gardens	



Criteria	Required Supporting Documentation
<b>6.8 SAFE AND ACCESSIBLE LIVING</b> <b>INTENT:</b> To provide facilities and housing which are appropriate and accessible for a variety of people. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.8.1</b> Achieve in at least 50% of dwellings 'Silver' performance levels under the Livable Housing Australia's 'Livable Housing Design Guidelines'.	Evidence in <i>design guidelines</i> .
<b>6.9 HEALTHY AND ACTIVE COMMUNITIES</b> <b>INTENT:</b> To design and deliver communities which promote community-based physical activity and support healthy lifestyle behaviours. <b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.9.1</b> Ensure all dwellings have access to neighbourhood parks within 400m (or a five minute walk) for a pocket park, and up to 800m (or a ten minute walk) for playing fields.	Evidence in plans and statement from planner.
<b>6.9.2</b> Provide a number of parks throughout the neighbourhood(s), catering for a range of uses and people of varying ages and abilities.	Open space strategy and statement from planner.
<b>6.9.3</b> Provide active travel links that are attractive, safe, direct and convenient to ensure permeability, creating better accessibility towards a destination.	Evidence in plans and statement from planner.
<b>6.9.4</b> Provide supporting infrastructure in desirable locations of the project with shade including resting areas, entertainment space, information boards, toilets and water bubblers.	Evidence in plans and statement from planner.
<b>6.9.5</b> Demonstrate that roads offer multiple use functions, providing opportunities for roads to act as a legitimate public domain. This could include but is not limited to providing on-road bicycle paths where possible or lowering speed limits on local streets.	Evidence in plans and statement from planner.

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# Residential Subdivision

A photograph of a family walking a large, fluffy black and white dog on a paved path. The family consists of a man in a light blue shirt and khaki pants, a woman in a blue patterned dress, a young girl in a colorful patchwork dress, and a young boy in a red and blue striped shirt. They are all smiling and walking towards the right. In the background is a modern house with a white facade and a dark, corrugated metal roof. The scene is set in a sunny, outdoor environment with green grass and some small plants.

Project: Breezes Muirhead

Developer: Defence Housing Australia and Investa Land

Certification: 6 elements (ecosystems, waste, energy, materials, water, community)

Certified 2013



# Residential Subdivision – 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 **15** credits from 1.3.3-1.3.21 under Urban Ecology (1.3).

## Criteria

## Required Supporting Documentation

### 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides and herbicides.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

**1.1.3** Where there is an ecological need, provide water features that allow habitat and refuge for fauna.

Stormwater management plan and ecological study.

### 1.2 EARTHWORKS

**INTENT:** To reduce the disturbance of construction works on the site's natural topography and nearby waterways.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Conduct thorough site analysis prior to planning and design to identify:

- areas of prime ecological significance;
- areas where clearing and/or major earthworks should specifically not occur;
- potential soil issues (e.g. dispersive soils); and
- the suitability of the site for earthworks and construction.

Site analysis outlining areas which require protection.

The project must adequately consider and preserve significant areas based on the advice of this report.



Criteria	Required Supporting Documentation
<p><b>1.2.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.</p> <p><b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p>	Statement from engineer.
<p><b>1.2.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant Federal, State and Local legislative and regulatory requirements.</p>	Erosion and sediment control plan/soil and water management plan, staging plan, and <i>statement of compliance</i> from an <i>appropriately qualified professional</i> .
<p><b>1.2.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p>	Statement from engineer.
<p><b>1.2.5</b> Design and construct street layout to fit with topography with minimal disruption.</p> <p><b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.</p>	Pre and post civil contour maps.
<p><b>1.2.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	Contamination report and details on remediation actions.
<h3>1.3 URBAN ECOLOGY</h3> <p><b>INTENT:</b> 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.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> 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.</p>	Statement from registered landscape architect/horticulturalist.
<p><b>1.3.2</b> Reduce urban heat island effect. This could be through:</p> <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction (e.g. open-grid pavement);</li> <li>• incorporation of breezeways and greenways;</li> <li>• provision of shading to roads, footpaths and bicycle paths;</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	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.
<p><b>REQUIREMENT:</b> Achieve at least 15 credits from the following options:</p>	
<p><b>1.3.3</b> Develop a climate change risk assessment for the site which considers the following factors which are directly relevant to the project site including:</p> <ul style="list-style-type: none"> <li>• flooding;</li> <li>• sea level rise;</li> <li>• consideration of extreme events;</li> <li>• biodiversity decline; and</li> <li>• bushfire hazards.</li> </ul>	Climate change risk assessment report/statement from <i>appropriately qualified professional</i> .

Criteria	Required Supporting Documentation
<p><b>1.3.4</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.</p> <p><b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.</p> <p><b>3 credits</b> – <i>brownfield site</i>.</p> <p><b>1.3.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i>, or for landscaping private areas prior to sale are <i>locally native</i>. 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.</p> <p><b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.</p> <p><b>1.3.6</b> Rehabilitate disturbed sites and degraded natural ecosystems, including areas adjoining or immediately adjacent to the site.</p> <p><b>1.3.7</b> Have bushfire mitigation and management plans which are cognisant of the principles of bushfire ecology and take appropriate management actions.</p> <p><b>1.3.8</b> Document and implement an appropriate weed and pest management strategy, including site rehabilitation and management of environmental weeds.</p> <p><b>1.3.9</b> Establish a native plant procurement program to assist with supply issues of local provenance stock for the purposes of landscaping of public open space areas, private land holdings and the local region.</p> <p><b>1.3.10</b> Establish and encourage vegetation communities within the project, with the incorporation of <i>threatened species</i> (either local, state or national) within public realm plantings.</p> <p><b>1.3.11</b> Where appropriate and cognisant of the road hierarchy and traffic volumes, identify and use potential habitat trees within streetscape/open space areas which provide foraging opportunities and related biodiversity benefits.</p> <p><b>1.3.12</b> Implement a monitoring and maintenance plan (at least 5 years in duration) to assess fauna, flora and habitat quality and health.</p> <p><b>1.3.13</b> Ensure ecological corridors are not severed by road networks without provision of appropriate fauna crossings, bridges or tunnels (<b>1 credit</b>). Demonstrate that retained corridors link to offsite protected areas/habitat (<b>2 credits</b>).</p> <p><b>1.3.14</b> Demonstrate the consideration of fauna movements across the site and provide for safe fauna movement when adjacent to significant wildlife corridors.</p> <p><b>1.3.15</b> Provide appropriate structures and policies to facilitate native fauna habitation (e.g. fauna boxes, hollow trees, relocate felled timber to open space areas).</p> <p><b>1.3.16</b> Adopt measures to manage native fauna through maintenance of habitat and control of non-native predators.</p>	<p>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.</p> <p>Landscape palette and statement from ecologist.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional).</p> <p>Maintenance plan and schedule and details of arrangements.</p> <p>Bushfire management plan.</p> <p>Weed and pest management strategy and evidence of implementation.</p> <p>Details of program including establishment timeframes, landscape plan and details of operator.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and landscape plans including landscape palette.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and details of beneficiary species.</p> <p>Monitoring plan and details of timeframes and responsibility matrix.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional).</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and <i>design guidelines</i> (if relevant).</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional).</p> <p>Pest management strategy or similar.</p>



Criteria	Required Supporting Documentation
<p><b>1.3.17</b> Have dog and/or cat exclusion zones to allow safe movement of native fauna, particularly in wildlife corridors.</p> <p><b>1.3.18</b> Where the project is located adjacent to a sensitive area such as a national park or nature reserve, minimise light pollution during and post-construction to limit ecological light pollution i.e. no direct beam light should be directed beyond the site boundaries or upwards, except where it is falling directly on a surface that it is intended to illuminate (exemptions may be made for illuminated place names).</p> <p><b>1.3.19</b> Develop a site specific fauna management plan for the demolition and construction phases of the project.</p> <p><b>1.3.20</b> Demonstrate the incorporation of food bearing and/or cultural landscapes within the public domain.</p> <p><b>1.3.21</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent <i>design guidelines</i> or other protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	<p>Evidence from environmental science professional (or related professional). <i>Design guidelines/covenants</i>.</p> <p>Lighting plans and statement from environmental science professional, registered landscape architect (or related professional).</p> <p>Fauna management plan.</p> <p>Statement from registered landscape architect/horticulturalist.</p> <p>When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.</p> <p>The ecological function of the green space pre and post development works should be articulated.</p>



# Residential Subdivision – Waste

To achieve certification in the Waste element, a *project* must achieve:

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- 2.3.1 and **one** credit from 2.3.2-2.3.4 under Post-Construction Phase (2.3).

## Criteria

## Required Supporting Documentation

### 2.1 ESSENTIAL ACTION

**INTENT:** To identify the most suitable opportunities for recycling of resources available to the site.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. *Statement of compliance* from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

### 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the pre-construction, civil works and construction phases of the project. At a minimum, the waste management plan should meet state/territory legislation and align with relevant waste targets (where set and applicable) and include the following:

- waste generation;
- waste systems;
- minimisation strategy;
- performance/reduction targets;
- bin quantity and size;
- collection frequency;
- waste contractors; and
- monitoring and reporting including frequency and method.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.



Criteria	Required Supporting Documentation
<p><b>2.2.3</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p> <p><b>2.2.4</b> Provide guidance for builders working on site regarding waste practices. At a minimum, the following should be included:</p> <ul style="list-style-type: none"> <li>the use of skip bins rather than cages;</li> <li>maintenance of waste records;</li> <li>use of contractors who transport waste to a licensed recycling centre;</li> <li>select materials and products which minimise and/or recycle packaging; and</li> <li>design dwellings to maximise use of standard sizes of materials wherever possible.</li> </ul> <p>The above requirements are also expected to be mandated in display villages and buildings directly controlled by the developer.</p>	<p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p> <p><i>Design guidelines</i>, educational information or similar.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for end users to reduce waste going to landfill.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>2.3.1</b> Where waste infrastructure is required to be installed in <i>public spaces</i>, include separate waste receptacles for general and recyclable waste.</p>	<p>Evidence in plans and <i>statement of compliance</i> from developer and local authority.</p>
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>2.3.2</b> Provide on lot and/or on site facilities for a compost facility for use by each dwelling. If individual household compost bins cannot be provided, a communal facility may be provided. Compost facility should be at least one cubic metre in size and can be used to recycle a balanced mix of green material (fruit and vegetable scraps) and brown material (twigs).</p> <p><b>2.3.3</b> Ensure that there are arrangements in place (e.g. contract with appropriate organisation, body corporate procedures or local government service) to provide collection and reuse of garden/green waste.</p> <p><b>2.3.4</b> Establish and/or facilitate during development and occupancy phases, use of a recycling centre where mulch, rock, fencing, and other construction materials can be crushed and reused to provide landscaping supplies for occupants.</p>	<p>In the instance that a communal compost facility is provided, evidence in the form of an agreement or contract should be provided detailing how the responsibility and ongoing maintenance of the facility will be managed.</p> <p><i>Statement of compliance</i> from developer and local authority or service provider.</p> <p>Evidence of proposed location and timing for recycling centre.</p>

# Residential Subdivision – Energy

To achieve certification in the Energy element, a *project* must achieve:

- **all** of the requirements under Climate Responsive Design (3.1);
- 3.2.1 under Peak Load (3.2);
- **two** credits from 3.3.1-3.3.5 or meet 3.3.6 under Reduction in Greenhouse Gas Emissions (3.3); and
- if the project includes any *community facilities*, **all** the requirements under Community Facilities (3.4).

## Criteria

## Required Supporting Documentation

### 3.1 CLIMATE RESPONSIVE DESIGN

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

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** At least 70% of lots within the project must demonstrate favourable orientation to provide best practice solar access opportunities, as well as ensure that buildings and their associated outdoor spaces are positioned on the lot in a manner that will enhance the solar amenity of the primary living areas, both internal and external.

Provide evidence that lot layouts and building orientations, including the positioning of fenestration/access points, habitable/non-habitable zones and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), overshadowing, glare and privacy. Also provide evidence that good design intentions are assured through project process by the provision of a system of education, advice, control and monitoring, including the use of building envelope plans administered through *design guidelines*.

**3.1.2** The project is designed to minimise extremities in temperatures, including negative microclimatic factors.

Statement from planner and engineer with reference to specific examples.

**3.1.3** The design of *public spaces* optimises microclimatic conditions at all times of the year.

Statement from planner and engineer with reference to specific examples.

**3.1.4** Mandated design controls within the project to achieve minimum 6 star NatHERS rating for each dwelling, without concessions.

*Design guidelines* and supporting evidence of energy efficiency using BERS, Accurate or FirstRate5 using second generation software systems' thermal calculation method.

### 3.2 PEAK LOAD

**INTENT:** To ensure that the project has adequately considered and sought to implement mechanisms to reduce peak load.

**REQUIREMENT:** Achieve the following:

**3.2.1** Demonstrate how peak load has been considered at a masterplanning level. This may include but is not limited to peak load management in *community facilities*, requirements in *design guidelines*, load limiting devices, direct load control or other hardwired inventions.

Evidence in electrical plans or *design guidelines* or similar and a *statement of compliance* from engineer or developer.

### 3.3 REDUCTION IN GREENHOUSE GAS EMISSIONS

**INTENT:** To reduce greenhouse gas emissions within the project.

**REQUIREMENT:** Achieve at least TWO credits from the following options, or meet 3.3.6:

#### 3.3.1 Alternative Energy Sources

Provision of solar power (or other non-polluting, renewable power source).

Statement from engineer showing capacity and supporting guidance within *design guidelines* regarding optimal positioning for performance.

#### 3.3.2 Water Heating and Appliances

Mandated use of:

- gas hot water;
- heat pump; or
- solar hot water (gas or electric boosted).

*Statement of compliance* from developer and *design guidelines* which include placement guidelines.

Appliance palette including product manufacturer, number and energy star rating and/or COP and EER.

And, mandated use of appliances which produce less greenhouse gas emissions. This should include at a minimum:

- dishwashers with an energy consumption of  $\leq 245\text{kWh}$  per annum; and
- air conditioning systems with a COP of  $\geq 3.20$  and EER of  $\geq 3.00$ .



Criteria	Required Supporting Documentation
<p><b>3.3.3 NatHERS Rating</b> Mandated design controls within the project to achieve minimum 7 star NatHERS rating for each dwelling.</p> <p><b>3.3.4 Reduction Through Design</b> Mandated design controls through <i>design guidelines</i> including at a minimum:</p> <p>For projects located within <i>climatic zones</i> 1-3:</p> <ul style="list-style-type: none"> <li>• light coloured roofs with an absorbance value of less than or equal to 0.6;</li> <li>• design to encourage breezes and circulation around dwellings;</li> <li>• east and west walls have an insulation level of at least R2.0;</li> <li>• shaded or appropriate glazed windows;</li> <li>• use of louvres or ventilation systems to maximise ventilation for prevailing breezes; and</li> <li>• ventilated living spaces.</li> </ul> <p>For projects located within <i>climatic zones</i> 4-8:</p> <ul style="list-style-type: none"> <li>• ventilated living spaces;</li> <li>• minimum <i>National Construction Code</i> compliant levels of insulation; and</li> <li>• thorough use of draught seals.</li> </ul> <p><b>3.3.5 Demand/Behavioural Management</b> This may include:</p> <ul style="list-style-type: none"> <li>• technology including sensors, timers etc.;</li> <li>• education using community-based social marketing and use of normative messaging, end user manual, community workshop; and/or</li> <li>• use of load monitoring devices to provide feedback (e.g. energy monitors).</li> </ul>	<p><i>Design guidelines</i> and supporting evidence of energy efficiency using BERS, Accurate or FirstRate5 using second generation software systems' thermal calculation method.</p> <p><i>Statement of compliance</i> from developer and <i>design guidelines</i>.</p> <p>Evidence in <i>design guidelines</i> or electrical plans with <i>Statement of compliance</i> from engineer or developer. Evidence of end user manual and proposed structure of end user education program.</p>
ALTERNATIVE COMPLIANCE	
<p><b>3.3.6 Reduction through Other Means</b> Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.</p>	<p>Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements (i.e. energy balance calculations/modelling). Mechanisms to achieve reductions to be specified.</p>
<h3>3.4 COMMUNITY FACILITIES</h3> <p><b>INTENT:</b> To reduce energy usage in <i>community facilities</i>.</p> <p><b>REQUIREMENT:</b> Where the project includes <i>community facilities</i>, achieve EACH of the following:</p>	
<p><b>3.4.1</b> Where swimming pools are installed in the project, demonstrate consideration of pump systems that are energy efficient and environmentally friendly. This includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• variable speed control;</li> <li>• variable-frequency drives; or</li> <li>• variable-speed pumps.</li> </ul> <p><b>3.4.2</b> In <i>community facilities</i> utilise (where relevant):</p> <ul style="list-style-type: none"> <li>• energy efficient lighting (e.g. LED or Compact Fluorescent Lamp); and</li> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum;</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• provision of solar power (or other non-polluting, renewable power source).</li> </ul>	<p>Statement from developer.</p> <p>Statement from engineer and relevant plans.</p>



# Residential Subdivision – Materials

To achieve certification in the Materials element, a *project* must achieve:

- the requirements under Environmentally Responsible Materials (4.1) according to the correct applicant description; and
- the requirements under Emissions (4.2) according to the correct applicant description.

## Criteria

## Required Supporting Documentation

### 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

**REQUIREMENT:** Land-Only Developers:

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in any buildings which are directly contracted by the developer within the project (e.g. community buildings/facilities, sales offices etc.), or meet 4.1.9.

**Note:** If no buildings are to be directly contracted by the developer, built form requirements do not apply.

**REQUIREMENT:** Land and Built Form Developers:

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in all dwellings, or meet 4.1.9.

**REQUIREMENT:** Land and Some Built Form Developers:

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in all dwellings completed by the developer within the project, or meet 4.1.9.

### CIVIL WORKS

#### 4.1.1 Roads

Statement from supplier and supporting technical information.

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base.

#### 4.1.2 Services

Statement from quantity surveyor and/or supplier and supporting technical information.

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

#### 4.1.3 Hard Landscaping

Statement from supplier and supporting technical information.

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.



Criteria	Required Supporting Documentation
<p><b>4.1.4 Soft Landscaping</b></p> <p>Throughout the project:</p> <ul style="list-style-type: none"> <li>(a) any vegetative debris from the site is mulched and reused; and</li> <li>(b) any non-contaminated topsoil is stockpiled and reused within the site.</li> </ul>	Statement from landscape architect, including details of quantities, uses and attributes.
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate.  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated;</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials;</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and/or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	Statement from quantity surveyor and/or supplier and supporting technical information.
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	Statement from supplier and supporting technical information.

Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (kgCO<sub>2</sub>e/occupant/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<p><b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.</p> <p><b>Land-Only Developers:</b></p> <ul style="list-style-type: none"> <li>i) Meet the requirements in any buildings which are directly contracted by the developer within the project (e.g. community buildings/facilities, sales offices etc.).</li> <li>ii) Provide explicit wording and guidance in <i>design guidelines</i> regarding the use of low emission paints, sealants and adhesives and the related health benefits.</li> </ul> <p><b>Land and Built Form Developers:</b></p> <ul style="list-style-type: none"> <li>i) Meet the requirements across the entire project, including all dwellings.</li> </ul> <p><b>Land and Some Built Form Developers:</b></p> <ul style="list-style-type: none"> <li>i) Meet the requirements in all dwellings completed by the developer within the project.</li> <li>ii) Provide explicit wording and guidance in <i>design guidelines</i> regarding the use of low emission paints, sealants and adhesives and the related health benefits.</li> </ul> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are E0 rated.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>



## Residential Subdivision – Water

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

- **two** credits from 5.1.1-5.1.5 or meet 5.1.6 under Reduction in Potable Water Demand (5.1);
- **all** of the requirements under Irrigation Requirements (5.2); and
- if the project includes any *community facilities*, **all** the requirements under Community Facilities (5.3).

### Criteria

### Required Supporting Documentation

## 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce household *potable water* consumption.

**REQUIREMENT:** Achieve at least TWO credits from the following options, or meet 5.1.6:

**5.1.1** Project is connected to a non-potable water supply which is plumbed to dwellings for outdoor and toilet use at a minimum.

Statement from engineer and relevant plans.

**5.1.2** Project mandates through *design guidelines*, covenants or encumbrances rainwater tanks on lots over 300m<sup>2</sup> which are plumbed to dwellings for outdoor and laundry use at a minimum.

*Design guidelines* and details of building design review processes.

**5.1.3** Project includes a central storage facility which captures either stormwater or rainwater for reuse within dwellings. At a minimum, recycled rainwater or stormwater should be plumbed to dwellings for outdoor and toilet use.

Statement from engineer and relevant plans.

**5.1.4** Project mandates through *design guidelines* or similar water efficient fixtures. At a minimum mandated fixtures must include:

- showerheads that use ≤6 litres per minute; and
- taps to bathrooms, kitchen and laundry that ≤6 litres per minute.

*Design guidelines* and details of building design review processes.

And, project mandates through *design guidelines*, water efficient appliances which include, where installed, a dishwasher with a water consumption of ≤14 litres per use.

**5.1.5** Project provides dedicated water efficient landscaping packages for private open space/outdoor areas. Water efficient landscaping packages must include the provision of at least 70% drought tolerant species.

Landscape palette and statement from landscape architect.

### ALTERNATIVE COMPLIANCE

**5.1.6** Reduce *potable water* usage within the project (excluding common area irrigation requirements captured in 5.2.1) by at least 20% more than required under relevant Federal and State government regulatory means.

*Design guidelines* and worked calculations showing how initiatives will achieve at least 20% reduced *potable water* usage compared to regulatory compliance.



Criteria	Required Supporting Documentation
<h2>5.2 IRRIGATION REQUIREMENTS</h2> <p><b>INTENT:</b> To reduce the use of <i>potable water</i> for irrigation purposes in the public realm.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>5.2.1</b> Use drought tolerant species which have no irrigation requirements for the public realm.</p> <p>Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through:</p> <ul style="list-style-type: none"> <li>stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);</li> <li>plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);</li> <li>greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);</li> <li>rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or</li> <li>use of underground water sources.</li> </ul> <p><b>Note:</b> the following exemptions may apply:</p> <ul style="list-style-type: none"> <li><i>potable water</i> used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover);</li> <li><i>potable water</i> used to irrigate non-commercial food production gardens; and</li> <li><i>potable water</i> used for playing/sports fields.</li> </ul>	<p>Landscape palette and statement from landscape architect.</p> <p>Certification by engineer or local government engineer or development assessment officer or other <i>appropriately qualified professional</i> (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)</p> <p>If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.</p>
<p><b>5.2.2</b> Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage.</p> <p>Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.</p> <p>Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.</p>	<p>Irrigation plan or statement from landscape architect regarding irrigation methods.</p> <p>Statement from registered landscape architect.</p> <p>Statement from registered landscape architect.</p>
<h2>5.3 COMMUNITY FACILITIES</h2> <p><b>INTENT:</b> To reduce <i>potable water</i> usage in <i>community facilities</i>.</p> <p><b>REQUIREMENT:</b> Where the project includes <i>community facilities</i>, achieve EACH of the following:</p>	
<p><b>5.3.1</b> Where an outdoor swimming pool is included within the project, a pool blanket is included.</p>	<p>Statement from developer.</p>
<p><b>5.3.2</b> Where a swimming pool is included within the project, ensure there is a backwash minimisation system in place (e.g. cartridge filter, filter utilising cyclone technology, oversized sand filter, centrifugal/pre-filter device, backwash recycling system or similar).</p>	<p>Statement from developer.</p>
<p><b>5.3.3</b> In <i>community facilities</i> utilise (where relevant):</p> <ul style="list-style-type: none"> <li>waterless urinals;</li> <li>taps with water usage of ≤6 litres per minute; and</li> <li>dishwashers with a water consumption of ≤14 litres per use.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>connect to a non-potable water source for indoor non-drinking water uses.</li> </ul>	<p>Statement from engineer and relevant plans.</p>



## Residential Subdivision – 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 **five** of the following sections:
  - Community Consultation, Planning and Development (6.2)
  - Ongoing Community Engagement, Governance and Activation (6.3)
  - Efficient and Accessible Transport (6.4)
  - Engaging and Inclusive Public Realm (6.5)
  - Community Prosperity (6.6)
  - Connected Communities (6.7)
  - Safe and Accessible Living (6.8)
  - Healthy and Active Communities (6.9)

### Criteria

### Required Supporting Documentation

## 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability goals and liveability including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between residents/employees and other local people using the area, according to Crime Prevention Through Environmental Design (CPTED).

Evidence in plans, and statement from planner.

## 6.2 COMMUNITY CONSULTATION, PLANNING AND DEVELOPMENT

**INTENT:** To proactively and meaningfully engage in effective and informed consultation with the local community.

**REQUIREMENT:** Achieve EACH of the following:

**6.2.1** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Consultation/stakeholder engagement strategy.

**6.2.2** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

**6.2.3** Consider and appropriately conserve and/or recognise and respect indigenous and post-European cultural heritage. Cultural heritage investigations should be conducted in accordance with the minimum standards outlined in the Burra Charter (1999) using the services of appropriately qualified professionals.

Evidence of recognition and protection or considerate reuse of cultural heritage sites or structures (and artefacts) if applicable and in keeping with advice from traditional owners, long-term locals or historical advisors.

This could include:

- evidence of voluntary liaison with traditional owner, if such a group can be identified, and the consideration of Indigenous cultural values in the processes, design and construction of the project; and
- evidence of consideration of significant post European cultural heritage, such as retaining significant trees, fences, old machinery and structures of significance, interpretive signage, research of site history and publication, promotion and incorporation in the design and naming of elements.

Criteria	Required Supporting Documentation
<b>6.3 ONGOING COMMUNITY ENGAGEMENT, GOVERNANCE AND ACTIVATION</b> <b>INTENT:</b> To ensure the project adequately plans and delivers a structure and framework which supports ongoing community cohesion and resilience as a socially sustainable community. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.3.1</b> Establish a structure or framework for ongoing community involvement and establish ongoing partnerships with the broader community. The framework should include some of the activities listed in 6.3.2-6.3.7 and commence within one year of the occupation of the first dwelling and continue through until the last stage. The framework should also include a plan to encourage the establishment of a self-sufficient community group by project completion.	Evidence of structure and framework including a list of measurables and delivery timeframes.
<b>REQUIREMENT:</b> Achieve at least FOUR credits from the following options, or identify other actions appropriate to the local context:	
<b>6.3.2</b> Facilitate community grants programs.	Details of programs including financial investment and timeframes.
<b>6.3.3</b> Sponsor, facilitate and/or provide local community groups/events. May be within the project or supporting the surrounding community.	Details including schedule, purpose and nature of the sponsorship.
<b>6.3.4</b> Involve local trainees in construction activities.	Details including arrangements and planned activities and timeframes.
<b>6.3.5</b> Engage with local environmental groups/catchment organisations for ongoing community-based environmental restoration and maintenance activities.	Details including arrangements and planned activities and timeframes.
<b>6.3.6</b> Provide or support an existing resource (e.g. <i>community development officer</i> or program) to facilitate and support community development.	Details including responsibilities, level of commitment and hours of commitment.
<b>6.3.7</b> Demonstrate the strategies and actions which are creating and facilitating a connected community.	Details including timeframes and structure.
<b>6.4 EFFICIENT AND ACCESSIBLE TRANSPORT</b> <b>INTENT:</b> To reduce reliance on private cars as the primary mode of transport. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.4.1</b> Demonstrate encouragement of active transport options amongst the community.	Details of programs including timeframes.
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.4.2 Bicycle Parking</b> Provide bicycle parking at all community facilities and retail/commercial businesses within the project at a rate of one space per 500sqm of GFA. Place bicycle parking in public view and easily accessible from the road.  Where an activity centre or similar is located within the project, end of trip facilities must be provided using the Queensland Transport's End-of-Trip Facilities for Bicycle Riders Guide (or similar) as a guide.	Evidence in plans, and statement from masterplanner and developer stating how the requirements have been met.
<b>6.4.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathways running wholly in public spaces (including streets and open spaces), directly connecting residential and commercial areas to local facilities and providing links between areas. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.	Evidence in plans, and statement from landscape architect, developer and engineer stating how the requirements have been met.



Criteria	Required Supporting Documentation
<p><b>6.4.4 Active Transport Linkages</b> Provide shared pathways for both walking and cycling. The width of the pathway should be a minimum of 3m and designed appropriately for the anticipated level of pedestrian and bicycle use, and the likely speed of cyclists and the required clearances. OR Provide pathways on both sides of all roads within the project.</p> <p><b>6.4.5 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within:</p> <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> <p>The stop/station must be serviced by at least ten services per weekday (by the time the buildings within the project are 50% occupied) to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.</p> <p><b>6.4.6 Community Transport</b> Provide a community transport network such as car share, car pool or community minibus to facilities.</p> <p><b>6.4.7 Low-Emitting and Fuel-Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles at all <i>community facilities</i> and retail/commercial businesses within the project for 5% of the total vehicle parking capacity of each site.</p>	<p>Evidence in plans and/or statement on how the requirements have been met.</p> <p>Evidence of existing transport location/s and frequency of service. If public transport stop is proposed, details of proposal to local government and negotiations to date should be provided.</p> <p>Evidence including arrangements and frequency.</p> <p>Evidence including distribution and eligibility.</p> <p>Evidence including the location, arrangements and provider of scheme.</p> <p>Evidence including the location and number of parks.</p>
<h2>6.5 ENGAGING AND INCLUSIVE PUBLIC REALM</h2> <p><b>INTENT:</b> To ensure the delivery of high quality public realm which provides an attractive, inclusive, non-discriminatory and safe environment for the community to meet, engage and recreate.</p> <p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>6.5.1</b> Demonstrate a hierarchy of functions within the public realm.</p> <p><b>6.5.2</b> The public realm is designed to allow multiple uses for community members, including children, the elderly and disabled people with regard taken to safety, comfort and security. Provide appropriate seating, shading, accessible toilets and water bubblers.</p> <p><b>6.5.3</b> The design of the public realm takes account of the role it plays in terms of inclusiveness and connectivity within and external to the project.</p> <p><b>6.5.4</b> The design plans indicate how space for quality social interaction has been considered in the design of streets and open areas and choice of material throughout the project and its surroundings.</p> <p><b>6.5.5</b> Benches and other seating areas are located in places with consideration of the sun, shade, wind and rain.</p> <p><b>6.5.6</b> Create locally distinct places which connect people through place and strongly reflect the local identity of the area through the design of social spaces.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>



Criteria	Required Supporting Documentation
<p><b>6.5.7</b> Demonstrate the flexibility of the public realm for multiple other uses (e.g. water sensitive urban design, conservation, business enterprises, healthy active living, etc).</p> <p><b>6.5.8</b> Provide an attractive, safe and walkable street environment by planting or retaining street trees at 12-25 metre intervals, or demonstrate intervals appropriate to the chosen tree species and region to ensure maximum shade for pedestrians.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p>Evidence in landscape plans and statement from registered landscape architect.</p>
<h2>6.6 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.6.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>• economic goals and priorities for the community;</li> <li>• employment targets and the job balance ratio;</li> <li>• activities to be provided within the project (e.g. retail, industrial, commercial or community based);</li> <li>• socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>• how the project will contribute to the host local government area's socio-economic profile; and</li> <li>• net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	<p><i>Statement of compliance</i> from developer and evidence of community economic/employment strategy and implementation plan.</p>
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>6.6.2</b> Provide significant diversity of housing types including a mix of dwelling sizes (e.g. number of bedrooms) and/or densities of housing.</p> <p><b>6.6.3</b> Provide at least 10% of houses, blocks of land or house and land packages are <i>affordable</i> and are interspersed with other housing, not in a group together or isolated from other housing.</p>	<p>Evidence in plans and statement from developer including lot mix, and densities.</p> <p>Market analysis and house, land and/or house and land package prices.</p>
<h2>6.7 CONNECTED COMMUNITIES</h2> <p><b>INTENT:</b> To provide integrated communities to meet local needs and reduce the number of private car trips required.</p> <p><b>REQUIREMENT:</b> Locate near (such that 75% of residences/workplaces are within 1km by foot) or provide within two years of the first residential occupancy at least FIVE of the following local services.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>(i) Local facilities should be co-located near public transport stops and pathways.</li> <li>(ii) Where the project claims local services which have fixed capacities (e.g. childcare, schools etc.) the project should engage with providers to ascertain capacity constraints and whether the local services are adequately equipped to cater for future growth.</li> </ul>	
<p><b>6.7.1</b> Newsagent</p> <p><b>6.7.2</b> Grocery/corner store</p> <p><b>6.7.3</b> Primary school</p> <p><b>6.7.4</b> Secondary school</p> <p><b>6.7.5</b> University</p> <p><b>6.7.6</b> Kindergarten, preschool, or childcare</p>	<p>Evidence in plans, including walking distances.</p>



Criteria	Required Supporting Documentation
<p><b>6.7.7</b> Medical practice</p> <p><b>6.7.8</b> Chemist</p> <p><b>6.7.9</b> Specialty stores</p> <p><b>6.7.10</b> Cafes and/or restaurants</p> <p><b>6.7.11</b> Community centre</p> <p><b>6.7.12</b> Dog park</p> <p><b>6.7.13</b> Public transport hub</p> <p><b>6.7.14</b> Bank or cash machine</p> <p><b>6.7.15</b> Post office</p> <p><b>6.7.16</b> Emergency services (including rural fire brigade, ambulance, police)</p> <p><b>6.7.17</b> Communication centre or business centre</p> <p><b>6.7.18</b> Community accessible facilities/spaces (e.g. rooms, public areas, education centres)</p> <p><b>6.7.19</b> Public toilets</p> <p><b>6.7.20</b> Farmer's markets</p> <p><b>6.7.21</b> Community garden</p>	
<h2>6.8 SAFE AND ACCESSIBLE LIVING</h2> <p><b>INTENT:</b> To provide facilities and housing which are appropriate and accessible for a variety of people.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.8.1</b> Achieve in at least 50% of dwellings 'Silver' performance levels under the Livable Housing Australia's 'Livable Housing Design Guidelines'.</p>	<p>Evidence in <i>design guidelines</i>.</p>
<h2>6.9 HEALTHY AND ACTIVE COMMUNITIES</h2> <p><b>INTENT:</b> To design and deliver communities which promote community-based physical activity and support healthy lifestyle behaviours.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>6.9.1</b> Ensure all dwellings have access to neighbourhood parks within 400m (or a five minute walk) for a pocket park, and up to 800m (or a ten minute walk) for playing fields.</p>	<p>Evidence in plans and statement from planner.</p>
<p><b>6.9.2</b> Provide a number of parks throughout the neighbourhood, catering for a range of uses and people of varying ages and abilities.</p>	<p>Open space strategy and statement from planner.</p>
<p><b>6.9.3</b> Provide active travel links that are attractive, safe, direct and convenient to ensure permeability, creating better accessibility towards a destination.</p>	<p>Evidence in plans and statement from planner.</p>
<p><b>6.9.4</b> Provide supporting infrastructure in desirable locations of the project with shade including resting areas, entertainment space, information boards, toilets and water bubblers.</p>	<p>Evidence in plans and statement from planner.</p>
<p><b>6.9.5</b> Demonstrate that roads offer multiple use functions, providing opportunities for roads to act as a legitimate public domain. This could include but is not limited to providing on-road bicycle paths where possible or lowering speed limits on local streets.</p>	<p>Evidence in plans and statement from planner.</p>



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# Seniors Living



Project: Halcyon Landing

Developer: Halcyon Management

Certification: 6 elements (ecosystems, waste, energy, materials, water, community)

Certified 2013



# Seniors Living – 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);
- 1.4.1 and 1.4.2 under Urban Ecology (1.4); and
  - Low Density Projects ( $\leq 2$  Storeys) – **15** credits from 1.4.3-1.4.21; or
  - High Density Projects ( $\geq 3$  Storeys) – **six** credits from 1.4.22-1.4.31.

## Criteria

## Required Supporting Documentation

### 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides and herbicides.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

### 1.2 SOIL HEALTH

**INTENT:** To ensure construction practices retain the ecological integrity of the soil to assist in achieving better environmental outcomes in the public realm.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Take soil samples in areas that are to be retained for vegetative growth to ensure an understanding of soil characteristics. For soils used for revegetation purposes, the organic content of the soil, pH and nutrient status shall be similar to that of undisturbed native soils of ecosystems that support the appropriate plant species intended for the site.

Soil or landscape management plan, including test results.



Criteria	Required Supporting Documentation
<p><b>1.2.2</b> Unless soil is heavily contaminated, retain insitu or stockpile and reuse all topsoil to best advantage on site. Where topsoil is minimal or absent and subsoil is deemed suitable for amendment, stockpile subsoil on site.</p> <p><b>Note:</b> Wherever possible, stockpiles should be no more than 1.5m high with maximum 1:2 batter and once stockpiling completed, covered with a green cover crop to avoid erosion, desiccation and solarisation.</p>	Evidence in plans of topsoil stockpile location and management requirements.
<p><b>1.2.3</b> Minimise access to site by vehicles to nominated roadways or parking areas, well away from existing trees or intended public realm areas, to minimise compaction. Rip compacted soil once building works are completed. Ensure building wastes, particularly liquid wastes do not contaminate the soil.</p>	Construction management plan, identifying access locations.
<p><b>1.2.4</b> Recycle and reuse all vegetative debris on site (e.g. for topsoil augmentation or composting purposes). If onsite reuse is not feasible, arrangements should be made for green waste to be transported for reuse or disposed of at a fully licensed recycler or reprocessor. There should be no pit burning of green waste on site or disposal to landfill.</p>	Statement from developer and registered landscape architect.
<p><b>1.2.5</b> Amend, mulch and revegetate soils disturbed during construction as well as soils on the remainder of the site where the site has formerly been used for farming, forestry, industrial, commercial or urban land uses. Demonstrate that soils are suitable for intended purposes.</p>	Soil or landscape management plan.
<h3>1.3 EARTHWORKS</h3> <p><b>INTENT:</b> To reduce the disturbance of construction works on the site's natural topography and nearby waterways.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> Conduct thorough site analysis prior to planning and design to identify:</p> <ul style="list-style-type: none"> <li>• areas of prime ecological significance;</li> <li>• areas where clearing and/or major earthworks should specifically not occur;</li> <li>• potential soil issues (e.g. dispersive soils); and</li> <li>• the suitability of the site for earthworks and construction.</li> </ul> <p>The project must adequately consider and preserve significant areas based on the advice of this report.</p>	Site analysis outlining areas which require protection.
<p><b>1.3.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.</p> <p><b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p>	Statement from engineer.
<p><b>1.3.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant Federal, State and Local legislative and regulatory requirements.</p>	Erosion and sediment control plan/soil and water management plan, staging plan and <i>statement of compliance</i> from an <i>appropriately qualified professional</i> .
<p><b>1.3.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p>	Statement from engineer.

Criteria	Required Supporting Documentation
<p><b>1.3.5</b> Design and construct street layout to fit with topography with minimal disruption.</p> <p><b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.</p> <p><b>1.3.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	<p>Pre and post civil contour maps.</p> <p>Contamination report and details on remediation actions.</p>
<h2>1.4 URBAN ECOLOGY</h2> <p><b>INTENT:</b> 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.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.4.1</b> 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.</p> <p><b>1.4.2</b> Reduce urban heat island effect. This could be through:</p> <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction (e.g. open-grid pavement);</li> <li>• incorporation of breezeways and greenways;</li> <li>• provision of shading to roads, footpaths and bicycle paths;</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	<p>Statement from registered landscape architect/horticulturalist.</p> <p>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.</p>
<h3>LOW DENSITY PROJECTS (≤2 STOREYS)</h3> <p><b>REQUIREMENT:</b> Achieve at least 15 credits from the following options:</p>	
<p><b>1.4.3</b> Develop a climate change risk assessment for the site which considers the following factors which are directly relevant to the project site including:</p> <ul style="list-style-type: none"> <li>• flooding;</li> <li>• sea level rise;</li> <li>• consideration of extreme events;</li> <li>• biodiversity decline; and</li> <li>• bushfire hazards.</li> </ul> <p><b>1.4.4</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.</p> <p><b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.</p> <p><b>3 credits</b> – <i>brownfield site</i>.</p> <p><b>1.4.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i>, or for landscaping private areas prior to sale are <i>locally native</i>. 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.</p> <p><b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.</p>	<p>Climate change risk assessment report/statement from <i>appropriately qualified professional</i>.</p> <p>Details of use of site prior to new project including pre-project site photos and statement from environmental professional/registered landscape architect/related professional detailing ecological value of the site prior to project.</p> <p>Landscape palette and statement from ecologist.</p>



Criteria	Required Supporting Documentation
<p><b>1.4.6</b> Rehabilitate disturbed sites and degraded natural ecosystems, including areas adjoining or immediately adjacent to the site.</p> <p><b>1.4.7</b> Have bushfire mitigation and management plans which are cognisant of the principles of bushfire ecology and take appropriate management actions.</p> <p><b>1.4.8</b> Document and implement an appropriate weed and pest management strategy, including site rehabilitation and management of environmental weeds.</p> <p><b>1.4.9</b> Establish a native plant procurement program to assist with supply issues of local provenance stock for the purposes of landscaping of public open space areas, private land holdings and the local region.</p> <p><b>1.4.10</b> Establish and encourage vegetation communities within a project, with the incorporation of <i>threatened species</i> (either local, state or national) within public realm plantings.</p> <p><b>1.4.11</b> Where appropriate and cognisant of the road hierarchy and traffic volumes, identify and use potential habitat trees within streetscape/open space areas which provide foraging opportunities and related biodiversity benefits.</p> <p><b>1.4.12</b> Implement a monitoring and maintenance plan (at least 5 years in duration) to assess fauna, flora and habitat quality and health.</p> <p><b>1.4.13</b> Ensure ecological corridors are not severed by road networks without provision of appropriate fauna crossings, bridges or tunnels (<b>1 credit</b>). Demonstrate that retained corridors link to offsite protected areas/habitat (<b>2 credits</b>).</p> <p><b>1.4.14</b> Demonstrate the consideration of fauna movements across the site and provide for safe fauna movement when adjacent to significant wildlife corridors.</p> <p><b>1.4.15</b> Provide appropriate structures and policies to facilitate native fauna habitation (e.g. fauna boxes, hollow trees, relocate felled timber to open space areas).</p> <p><b>1.4.16</b> Adopt measures to manage native fauna through maintenance of habitat and control of non-native predators.</p> <p><b>1.4.17</b> Have dog and/or cat exclusion zones to allow safe movement of native fauna, particularly in wildlife corridors.</p> <p><b>1.4.18</b> Where the project is located adjacent to a sensitive area such as a national park or nature reserve, minimise light pollution during and post-construction to limit ecological light pollution i.e. no direct beam light should be directed beyond the site boundaries or upwards, except where it is falling directly on a surface that it is intended to illuminate (exemptions may be made for illuminated place names).</p> <p><b>1.4.19</b> Develop a site specific fauna management plan for the demolition and construction phases of the project.</p> <p><b>1.4.20</b> Demonstrate the incorporation of food bearing and/or cultural landscapes within the public domain.</p>	<p>Evidence from environmental science professional, registered landscape architect (or related professional).</p> <p>Maintenance plan and schedule and details of arrangements.</p> <p>Bushfire management plan.</p> <p>Weed and pest management strategy and evidence of implementation.</p> <p>Details of program including establishment timeframes, landscape plan and details of operator.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and landscape plans including landscape palette.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and details of beneficiary species.</p> <p>Monitoring plan and details of timeframes and responsibility matrix.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional).</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and <i>design guidelines</i> (if relevant).</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional).</p> <p>Pest management strategy or similar.</p> <p>Evidence from environmental science professional (or related professional). <i>Design guidelines</i>/covenants.</p> <p>Lighting plans and statement from environmental science professional, registered landscape architect (or related professional).</p> <p>Fauna management plan.</p> <p>Statement from registered landscape architect/horticulturalist.</p>



Criteria	Required Supporting Documentation
<p><b>1.4.21</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent <i>design guidelines</i> or other protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	<p>When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.</p> <p>The ecological function of the green space pre and post development works should be articulated.</p>
<p><b>HIGH DENSITY PROJECTS (≥3 STOREYS)</b></p> <p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>1.4.22</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.</p> <p><b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.</p> <p><b>3 credits</b> – <i>brownfield site</i>.</p>	<p>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.</p>
<p><b>1.4.23</b> The project is a refurbishment (<b>2 credits</b>).</p>	<p>Details of existing use and pre and post refurbishment building envelope.</p>
<p><b>1.4.24</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i> (excluding those areas designated for turfed recreation areas), or for landscaping private areas prior to sale are <i>locally native</i>. 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.</p>	<p>Landscape palette and statement from registered landscape architect.</p>
<p><b>1.4.25</b> Include green roofs or green walls, incorporating native plants species, into the project. Species selection should be informed by an <i>appropriately qualified professional</i> and should be designed to improve ecological function. A maintenance plan and non-potable irrigation supply should also be in place.</p>	<p>Details on size, location and featured species. Statement from registered landscape architect and/or ecologist regarding how the green wall/roof will improve ecological function.</p>
<p><b>1.4.26</b> Incorporate community and productive gardens in the project including space for garden plots, communal or individual vegetable gardens.</p>	<p>Details on the location, maintenance and management of the community/productive gardens.</p>
<p><b>1.4.27</b> Demonstrate that the planting palette for the project contains a mix of fast and slow growing species.</p>	<p>Statement from registered landscape architect.</p>



Criteria	Required Supporting Documentation
<p><b>1.4.28</b> Demonstrate appropriate consideration of viable planting spaces by:</p> <ul style="list-style-type: none"> <li>• utilising appropriate media with low organic content (5% or less);</li> <li>• utilise appropriate species for planting which address functionality requirements; and</li> <li>• demonstrate appropriate consideration of soil depths for the proposed or existing plantings.</li> </ul>	Statement from registered landscape architect.
<p><b>1.4.29</b> Minimise noise pollution during and post construction.</p>	Construction management plan.
<p><b>1.4.30</b> A minimum of 10% (or greater than regulatory standard) of the site is allocated for <i>deep planting</i>.</p>	Statement from registered landscape architect.
<p><b>1.4.31</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent <i>design guidelines</i> or other protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	<p>When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.</p>

# Seniors Living – Waste

To achieve certification in the Waste element, a *project* must achieve:

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- Under Post Construction (2.3):
  - Low Density Projects ( $\leq 2$  Storeys) – meet 2.3.1; or
  - High Density Projects ( $\geq 3$  Storeys) – **one** credit from 2.3.2-2.3.3.

## Criteria

## Required Supporting Documentation

### 2.1 ESSENTIAL ACTION

**INTENT:** To ensure there is a clear strategy which facilitates the recycling of resources and reduces waste going to landfill.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. *Statement of compliance* from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

### 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the works. At a minimum, the waste management plan should include the following:

- waste generation;
- waste systems;
- minimisation strategy;
- performance/reduction targets;
- bin quantity and size;
- collection frequency;
- bin storage;
- waste collection;
- waste contractors; and
- signage.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.



Criteria	Required Supporting Documentation
<p><b>2.2.3</b> Recycle or reuse at least 60% of all built form construction waste (by volume).</p> <p><b>2.2.4</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p> <p><b>2.2.5</b> Provide guidance for builders working on site regarding waste practices. At a minimum, the following should be included:</p> <ul style="list-style-type: none"> <li>• the use of skip bins rather than cages;</li> <li>• maintenance of waste records;</li> <li>• use of contractors who transport waste to a licensed recycling centre;</li> <li>• select materials and products which minimise and/or recycle packaging; and</li> <li>• design dwellings to maximise use of standard sizes of materials wherever possible.</li> </ul> <p>The above requirements are also expected to be mandated in display villages and buildings directly controlled by the developer.</p>	<p>Evidence of a waste management plan. Quarterly reports, including waste records should be kept for compliance purposes.</p> <p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p> <p><i>Design guidelines</i>, educational information or similar.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for end users to reduce waste going to landfill.</p> <p><b>LOW DENSITY PROJECTS (≤2 STOREYS)</b></p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>2.3.1</b> Provide a compost bin, worm farm and/or green bin or similar initiative for each dwelling or for the complex (i.e. in a communal area).</p>	<p><i>Statement of compliance</i> from developer and evidence in plans of dedicated space.</p>
<p><b>HIGH DENSITY PROJECTS (≥3 STOREYS)</b></p> <p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>2.3.2</b> Where waste chutes are provided for general waste, chutes are also provided for recycling.</p> <p><b>2.3.3</b> Dedicated storage for the separation, collection and recycling of waste is provided and is easily accessible by all building occupants.</p>	<p>Evidence in plans and statement from local authority, architect or building designer.</p> <p>Evidence in plans and statement from local authority, architect or building designer.</p>



## Seniors Living – Energy

To achieve certification in the Energy element, a *project* must achieve:

- **all** of the requirements under Climate Responsive Design (3.1);
- 3.2.1 under Common Area Lighting (3.2);
- if the project includes any total enclosed or semi-enclosed carparks, **all** of the requirements under Carparks (3.3);
- if the project includes any lift systems, **all** of the requirements under Lift Systems (3.4);
- **two** credits from 3.5.1-3.5.5 or meet 3.5.6 under Reduction in Greenhouse Gas Emissions (3.5); and
- if the project includes any *community facilities*, **all** of the requirement under Community Facilities (3.6).

### Criteria

### Required Supporting Documentation

## 3.1 CLIMATE RESPONSIVE DESIGN

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

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** The project must be masterplanned and controlled through the development process to demonstrate that positive passive design outcomes are maximised.

Provide evidence that lot layouts and building orientations, including the positioning of fenestration/access points, habitable/non-habitable zones and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), overshadowing, glare and privacy. Also provide evidence that good design intentions are assured through project process by the provision of a system of education, advice, control and monitoring, including through the use of Building Envelope Plans administered through *design guidelines*.

**3.1.2** The project is designed to minimise adverse conditions, including negative microclimatic factors.

Statement from planner and engineer with reference to specific examples.

**3.1.3** The design of *public spaces* optimises microclimatic conditions at all times of the year.

Statement from planner and engineer with reference to specific examples.

## 3.2 COMMON AREA LIGHTING

**INTENT:** To ensure *public spaces* are lit using energy efficient lighting.

**REQUIREMENT:** Achieve the following:

**3.2.1** Provide efficient lighting in common areas, (e.g. street lighting, public spaces), such as through utilising solar power, fluorescent or LED fittings.

Evidence in masterplan or electrical plans with *statement of compliance* from electrical engineer or developer.

## 3.3 CARPARKS

**INTENT:** To reduce the energy usage associated with ventilating carparks within buildings.

**REQUIREMENT:** Achieve EACH of the following:

**3.3.1** Install carbon monoxide monitoring/controls to carpark exhaust systems.

Evidence in electrical plans with *statement of compliance* from engineer.

**3.3.2** 25% of the total enclosed/semi-enclosed carpark by area is naturally ventilated, or 50% of the total enclosed/semi-enclosed carpark has either passive supply or passive exhaust.

Statement from engineer and evidence in plans.



Criteria	Required Supporting Documentation
<h3>3.4 LIFT SYSTEMS</h3> <p><b>INTENT:</b> To reduce the energy usage of lift systems within buildings.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.4.1</b> Where lifts are installed in the project, demonstrate consideration of lift power systems that are energy efficient and environmentally friendly. This includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• use of regenerative drives;</li> <li>• machine room-less elevators;</li> <li>• dispatch control systems;</li> <li>• intelligent automation; and/or</li> <li>• stand-by modes.</li> </ul>	<p>Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.</p>
<h3>3.5 REDUCTION IN GREENHOUSE GAS EMISSIONS</h3> <p><b>INTENT:</b> To reduce greenhouse gas emissions within the project.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options, or meet 3.5.6:</p>	
<p><b>3.5.1 Alternative Energy Sources</b> Provision of solar power (or other non-polluting, renewable power source).</p>	<p>Statement from engineer showing capacity and supporting guidance within <i>design guidelines</i> regarding optimal positioning for performance.</p>
<p><b>3.5.2 Water Heating and Appliances</b> Mandated use of:</p> <ul style="list-style-type: none"> <li>• gas hot water;</li> <li>• heat pump; or</li> <li>• solar hot water (gas or electric boosted).</li> </ul> <p>And, mandated use of appliances which produce less greenhouse gas emissions. This should include at a minimum:</p> <ul style="list-style-type: none"> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum; and</li> <li>• air conditioning systems with a <i>COP</i> of <math>\geq 3.20</math> and <i>EER</i> of <math>\geq 3.00</math>.</li> </ul>	<p><i>Statement of compliance</i> from developer and <i>design guidelines</i>.</p> <p>Appliance palette including product manufacturer, number and energy star rating and/or <i>COP</i> and <i>EER</i>.</p>
<p><b>3.5.3 NatHERS Rating</b> Mandated design controls within the project to achieve minimum 7 star NatHERS rating for each detached dwelling. Units achieve 6 star NatHERS rating on average.</p>	<p><i>Design guidelines</i> and supporting evidence of energy efficiency using BERS, Accurate or FirstRate5 using second generation software systems' thermal calculation method.</p>
<p><b>3.5.4 Reduction Through Design</b> Mandated design controls through <i>design guidelines</i> including at a minimum:</p> <p>For projects located within <i>climatic zones</i> 1-3:</p> <ul style="list-style-type: none"> <li>• light coloured roofs with an absorbance value of less than or equal to 0.6;</li> <li>• design to encourage breezes and circulation around dwellings;</li> <li>• east and west walls have an insulation level of at least R2.0;</li> <li>• shaded or appropriate glazed windows;</li> <li>• use of louvres or ventilation systems to maximise ventilation for prevailing breezes; and</li> <li>• ventilated living spaces.</li> </ul> <p>For projects located within <i>climatic zones</i> 4-8:</p> <ul style="list-style-type: none"> <li>• ventilated living spaces;</li> <li>• minimum <i>National Construction Code</i> compliant levels of insulation; and</li> <li>• thorough use of draught seals.</li> </ul>	<p><i>Statement of compliance</i> from developer and <i>design guidelines</i>.</p>

Criteria	Required Supporting Documentation
<p><b>3.5.5 Demand/Behavioural Management</b></p> <p>This may include:</p> <ul style="list-style-type: none"> <li>• technology including sensors, timers etc.;</li> <li>• education using community-based social marketing and use of normative messaging, end user manual, community workshop; and/or</li> <li>• use of load monitoring devices to provide feedback (e.g. energy monitors).</li> </ul>	<p>Evidence in <i>design guidelines</i> or electrical plans with <i>statement of compliance</i> from engineer or developer. Evidence of end user manual and proposed structure of end user education program.</p>
<p>ALTERNATIVE COMPLIANCE</p>	
<p><b>3.5.6 Reduction through Other Means</b></p> <p>Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.</p>	<p>Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements (i.e. energy balance calculations/modelling). Mechanisms to achieve reductions to be specified.</p>
<p><b>3.6 COMMUNITY FACILITIES</b></p> <p><b>INTENT:</b> To reduce energy usage in <i>community facilities</i>.</p> <p><b>REQUIREMENT:</b> Where the project includes <i>community facilities</i>, achieve EACH of the following:</p>	
<p><b>3.6.1</b> Where swimming pools are installed in the project, demonstrate consideration of pump systems that are energy efficient and environmentally friendly. This includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• variable speed control;</li> <li>• variable-frequency drives; or</li> <li>• variable-speed pumps.</li> </ul>	<p>Statement from developer.</p>
<p><b>3.6.2</b> In <i>community facilities</i> utilise (where relevant):</p> <ul style="list-style-type: none"> <li>• energy efficient lighting (e.g. LED or Compact Fluorescent Lamp); and</li> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum;</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• provision of solar power (or other non-polluting, renewable power source).</li> </ul>	<p>Statement from engineer and relevant plans.</p>



## Seniors Living – Materials

To achieve certification in the Materials element, a **project** must achieve:

- the requirements under Environmentally Responsible Materials (4.1) according to the correct applicant description; and
- the requirements under Emissions (4.2) according to the correct applicant description.

### Criteria

### Required Supporting Documentation

## 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

**REQUIREMENT: Land-Only Developers:**

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in any buildings which are directly contracted by the developer within the project (e.g. community buildings/facilities, sales offices etc.), or meet 4.1.9

**Note:** If no buildings are to be directly contracted by the developer, built form requirements do not apply.

**REQUIREMENT: Land and Built Form Developers:**

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in all dwellings, or meet 4.1.9.

**REQUIREMENT: Land and Some Built Form Developers:**

- Meet the requirements of THREE of the 'Civil Works' options (4.1.1-4.1.4) across the entire project, or meet 4.1.9; and
- Meet the requirements under 'Structure', 'Envelope/Linings' and ONE other under 'Built Form' options (4.1.5-4.1.8) in all dwellings completed by the developer within the project, or meet 4.1.9.

### CIVIL WORKS

#### 4.1.1 Roads

Statement from supplier and supporting technical information.

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base.

#### 4.1.2 Services

Statement from quantity surveyor and/or supplier and supporting technical information.

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

#### 4.1.3 Hard Landscaping

Statement from supplier and supporting technical information.

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.

Criteria	Required Supporting Documentation
<p><b>4.1.4 Soft Landscaping</b></p> <p>Throughout the project:</p> <ul style="list-style-type: none"> <li>(a) any vegetative debris from the site is mulched and reused; and</li> <li>(b) any non-contaminated topsoil is stockpiled and reused within the site.</li> </ul>	<p>Statement from landscape architect, including details of quantities, uses and attributes.</p>
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate;  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated.</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	<p>Statement from supplier and supporting technical information.</p>
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	<p>Statement from supplier and supporting technical information.</p>
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials; and/or</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	<p>Statement from quantity surveyor and/or supplier and supporting technical information.</p>
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	<p>Statement from supplier and supporting technical information.</p>





Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>• ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>• ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (kgCO<sub>2</sub>e/occupant/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.	
<b>Land-Only Developers:</b>	
<ul style="list-style-type: none"> <li>i) Meet the requirements in any buildings which are directly contracted by the developer within the project (e.g. community buildings/facilities, sales offices etc.).</li> <li>ii) Provide explicit wording and guidance in <i>design guidelines</i> regarding the use of low emission paints, sealants and adhesives and the related health benefits.</li> </ul>	
<b>Land and Built Form Developers:</b>	
<ul style="list-style-type: none"> <li>i) Meet the requirements across the entire project, including all dwellings.</li> </ul>	
<b>Land and Some Built Form Developers:</b>	
<ul style="list-style-type: none"> <li>i) Meet the requirements in all dwellings completed by the developer within the project.</li> <li>ii) Provide explicit wording and guidance in <i>design guidelines</i> regarding the use of low emission paints, sealants and adhesives and the related health benefits.</li> </ul>	
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are E0 rated.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.

# Seniors Living – Water

To achieve certification in the Water element, a *project* must achieve:

- Under Reduction in Potable Water Demand (5.1):
  - Low Density Projects ( $\leq 2$  Storeys) – **two** credits from 5.1.1-5.1.5 or meet 5.1.6; or
  - High Density Projects ( $\geq 3$  Storeys) – **two** credits from 5.1.7-5.1.9 or meet 5.1.10
- all** of the requirements under Irrigation Requirements (5.2); and
- if the project includes any *community facilities*, **all** the requirements under Community Facilities (5.3).

## Criteria

## Required Supporting Documentation

### 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce household *potable water* consumption.

#### LOW DENSITY PROJECTS ( $\leq 2$ STOREYS)

**REQUIREMENT:** Achieve at least **TWO** credits from the following options, or meet 5.1.6:

**5.1.1** Project is connected to a non-potable water supply which is plumbed to dwellings for outdoor and toilet use at a minimum.

Statement from engineer and relevant plans.

**5.1.2** Project mandates through *design guidelines*, covenants or encumbrances rainwater tanks on lots over 300m<sup>2</sup> which are plumbed to dwellings for outdoor and laundry use at a minimum.

*Design guidelines* and details of building design review processes.

**5.1.3** Project includes a central storage facility which captures either stormwater or rainwater for reuse within dwellings. At a minimum, recycled rainwater or stormwater should be plumbed to dwellings for outdoor and toilet use.

Statement from engineer and relevant plans.

**5.1.4** Project mandates through *design guidelines* or similar water efficient fixtures. At a minimum mandated fixtures must include:

- showerheads that use  $\leq 6$  litres per minute; and
- taps to bathrooms, kitchen and laundry that use  $\leq 6$  litres per minute.

*Design guidelines* and details of building design review processes.

And, project mandates through *design guidelines*, water efficient appliances which include, where installed, a dishwasher with a water consumption of  $\leq 14$  litres per use.

**5.1.5** Project provides dedicated water efficient landscaping packages for private open space/outdoor areas. Water efficient landscaping packages must include the provision of at least 70% drought tolerant species.

Landscape palette and statement from landscape architect.

#### ALTERNATIVE COMPLIANCE

**5.1.6** Reduce *potable water* usage within the project (excluding common area irrigation requirements captured in 5.2.1) by at least 20% more than required under relevant Federal and State government regulatory means.

*Design guidelines* and worked calculations showing how initiatives will achieve at least 20% reduced *potable water* usage compared to regulatory compliance.

#### HIGH DENSITY PROJECTS ( $\geq 3$ STOREYS)

**REQUIREMENT:** Achieve at least **TWO** credits from the following options, or meet 5.1.10:

**5.1.7** Project is connected to a non-potable water supply which is plumbed to dwellings for toilet use at a minimum.

Statement from engineer and relevant plans.

**5.1.8** At a minimum fixtures must include:

- showerheads that use  $\leq 6$  litres per minute; and
- taps to bathrooms, kitchen and laundry that use  $\leq 6$  litres per minute.

Finishes palette including product manufacturer, number and WELS rating.

**5.1.9** Water efficient appliances installed within dwellings which include, where installed, a dishwasher with a water consumption of  $\leq 14$  litres per use.

Appliance palette including product manufacturer, number and WELS rating.



Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<b>5.1.10</b> Reduce <i>potable water</i> usage within the project (excluding common area irrigation requirements captured in 5.2.1) by at least 20% more than required under relevant Federal and State government regulatory means.	Worked calculations showing how initiatives will achieve at least 20% reduced <i>potable water</i> usage compared to regulatory compliance.
<b>5.2 IRRIGATION REQUIREMENTS</b>	
<b>INTENT:</b> To reduce the use of potable water for irrigation purposes in the public realm. <b>REQUIREMENT:</b> Achieve EACH of the following:	
<b>5.2.1</b> Use drought tolerant species which have no irrigation requirements for the public realm.  Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through: <ul style="list-style-type: none"> <li>• stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);</li> <li>• plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);</li> <li>• greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);</li> <li>• rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or</li> <li>• use of underground water sources.</li> </ul> <b>Note:</b> the following exemptions may apply: <ul style="list-style-type: none"> <li>• <i>potable water</i> used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover); and</li> <li>• <i>potable water</i> used to irrigate non-commercial food production gardens.</li> </ul>	Landscape palette and statement from landscape architect.  Certification by engineer or local government engineer or development assessment officer or other <i>appropriately qualified professional</i> (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)  If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.
<b>5.2.2</b> Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage.	Irrigation plan or statement from landscape architect regarding irrigation methods.
<b>5.2.3</b> Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.	Statement from registered landscape architect.
<b>5.2.4</b> Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.	Statement from registered landscape architect.
<b>5.3 COMMUNITY FACILITIES</b>	
<b>INTENT:</b> To reduce <i>potable water</i> usage in <i>community facilities</i> . <b>REQUIREMENT:</b> Where the project includes <i>community facilities</i> , achieve EACH of the following:	
<b>5.3.1</b> Where an outdoor swimming pool is included within the project, a pool blanket is included.	Statement from developer.
<b>5.3.2</b> Where a swimming pool is included within the project, ensure there is a backwash minimisation system in place (e.g. cartridge filter, filter utilising cyclone technology, oversized sand filter, centrifugal/pre-filter device, backwash recycling system or similar).	Statement from developer.
<b>5.3.3</b> In <i>community facilities</i> utilise (where relevant): <ul style="list-style-type: none"> <li>• waterless urinals;</li> <li>• taps with water usage of ≤6 litres per minute; and</li> <li>• dishwashers with a water consumption of ≤14 litres per use.</li> </ul> OR <ul style="list-style-type: none"> <li>• connect to a non-potable water source for indoor non-drinking water uses.</li> </ul>	Statement from engineer and relevant plans.

# Seniors Living – 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 **five** of the following sections:
  - Community Consultation, Planning and Development (6.2)
  - Ongoing Community Engagement, Governance and Activation (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)
  - Safe and Accessible Living (6.9)
  - Healthy and Active Communities (6.10)

## Criteria

## Required Supporting Documentation

### 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability and liveability goals including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between residents/employees and other local people using the area, according to Crime Prevention Through Environmental Design (*CPTED*).

Evidence in plans, and statement from planner.

### 6.2 COMMUNITY CONSULTATION, PLANNING AND DEVELOPMENT

**INTENT:** To proactively and meaningfully engage in effective and informed consultation with the local community.

**REQUIREMENT:** Achieve EACH of the following:

**6.2.1** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Consultation/stakeholder engagement strategy.

**6.2.2** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

**6.2.3** Consider and appropriately conserve and/or recognise and respect indigenous and post-European cultural heritage. Cultural heritage investigations should be conducted in accordance with the minimum standards outlined in the Burra Charter (1999) using the services of appropriately qualified professionals.

Evidence of recognition and protection or considerate reuse of cultural heritage sites or structures (and artefacts) if applicable and in keeping with advice from traditional owners, long-term locals or historical advisors.

This could include:

- evidence of voluntary liaison with traditional owner, if such a group can be identified, and the consideration of Indigenous cultural values in the processes, design and construction of the project; and
- evidence of consideration of significant post European cultural heritage, such as retaining significant trees, fences, old machinery and structures of significance, interpretive signage, research of site history and publication, promotion and incorporation in the design and naming of elements.



Criteria	Required Supporting Documentation
<b>6.3 ONGOING COMMUNITY ENGAGEMENT, GOVERNANCE AND ACTIVATION</b> <b>INTENT:</b> To ensure the project adequately plans and delivers a structure and framework which supports ongoing community cohesion and resilience as a socially sustainable community. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.3.1</b> Establish a structure or framework for ongoing community involvement and establish ongoing partnerships with the broader community. The framework should include some of the activities listed in 6.3.2-6.3.7 and commence within one year of the occupation of the first dwelling and continue through until the last stage. The framework should also include a plan to encourage the establishment of a self-sufficient community group by project completion.	Evidence of structure and framework including a list of measurables and delivery timeframes.
<b>REQUIREMENT:</b> Achieve at least FOUR credits from the following options, or identify other actions appropriate to the local context:	
<b>6.3.2</b> Facilitate community grants programs.	Details of programs including financial investment and timeframes.
<b>6.3.3</b> Sponsor, facilitate and/or provide local community groups/events. May be within the project or supporting the surrounding community.	Details including schedule, purpose and nature of the sponsorship.
<b>6.3.4</b> Involve local trainees in construction activities.	Details including arrangements and planned activities and timeframes.
<b>6.3.5</b> Engage with local environmental groups/catchment organisations for ongoing community-based environmental restoration and maintenance activities.	Details including arrangements and planned activities and timeframes.
<b>6.3.6</b> Provide or support an existing resource (e.g. <i>community development officer</i> or program) to facilitate and support community development.	Details including responsibilities, level of commitment and hours of commitment.
<b>6.3.7</b> Demonstrate the strategies and actions which are creating and facilitating a connected community.	Details including timeframes and structure.
<b>6.4 EFFICIENT AND ACCESSIBLE TRANSPORT</b> <b>INTENT:</b> To reduce reliance on private cars as the primary mode of transport. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.4.1</b> Demonstrate encouragement of active transport options amongst the community.	Details of programs including timeframes.
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.4.2 Bicycle Parking</b> Provide bicycle parking at all community facilities and retail/commercial businesses within the project at a rate of one space per 500sqm of GFA. Place bicycle parking in public view and easily accessible from the road.  Where an activity centre or similar is located within the project, end of trip facilities must be provided using the Queensland Transport's End-of-Trip Facilities for Bicycle Riders Guide (or similar) as a guide.	Evidence in plans, and statement from masterplanner and developer stating how the requirements have been met.



Criteria	Required Supporting Documentation
<p><b>6.4.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathways running wholly in public spaces (including streets and open spaces), directly connecting residential and commercial areas to local facilities and providing links between areas. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.</p> <p><b>6.4.4 Active Transport Linkages</b> Provide shared pathways for both walking and cycling. The width of the pathway should be a minimum of 3m and designed appropriately for the anticipated level of pedestrian and bicycle use, and the likely speed of cyclists and the required clearances.</p> <p>OR</p> <p>Provide pathways on both sides of all roads within the project.</p> <p><b>6.4.5 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within:</p> <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> <p>The stop/station must be serviced by at least ten services per weekday (by the time the buildings within the project are 50% occupied) to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.</p> <p><b>6.4.6 Community Transport</b> Provide a community transport network such as car share, car pool or community minibus to facilities.</p> <p><b>6.4.7 Low-Emitting and Fuel-Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles at all <i>community facilities</i> and retail/commercial businesses within the project for 5% of the total vehicle parking capacity of each site.</p>	<p>Evidence in plans, and statement from landscape architect, developer and engineer stating how the requirements have been met.</p> <p>Evidence in plans and/or statement on how the requirements have been met.</p> <p>Evidence of existing transport location/s and frequency of service. If public transport stop is proposed, details of proposal to local government and negotiations to date should be provided.</p> <p>Evidence including arrangements and frequency.</p> <p>Evidence including distribution and eligibility.</p> <p>Evidence including the location, arrangements and provider of scheme.</p> <p>Evidence including the location and number of parks.</p>
<p><b>6.5 ENGAGING AND INCLUSIVE PUBLIC REALM</b></p> <p><b>INTENT:</b> To ensure the delivery of high quality public realm which provides an attractive, inclusive, non-discriminatory and safe environment for the community to meet, engage and recreate.</p> <p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>6.5.1</b> Demonstrate a hierarchy of functions within the public realm.</p> <p><b>6.5.2</b> The public realm is designed to allow multiple uses for community members, including children, the elderly and disabled people with regard taken to safety, comfort and security. Provide appropriate seating, shading, accessible toilets and water bubblers.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>



Criteria	Required Supporting Documentation
<p><b>6.5.3</b> The design of the public realm takes account of the role it plays in terms of inclusiveness and connectivity within and external to the project.</p> <p><b>6.5.4</b> The design plans indicate how space for quality social interaction has been considered in the design of streets and open areas and choice of material throughout the project and its surroundings.</p> <p><b>6.5.5</b> Benches and other seating areas are located in places with consideration of the sun, shade, wind and rain.</p> <p><b>6.5.6</b> Create locally distinct places which connect people through place and strongly reflect the local identity of the area through the design of social spaces.</p> <p><b>6.5.7</b> Demonstrate the flexibility of the public realm for multiple other uses (e.g. water sensitive urban design, conservation, business enterprises, healthy active living, etc).</p> <p><b>6.5.8</b> Provide an attractive, safe and walkable street environment by planting or retaining street trees at 12-25 metre intervals, or demonstrate intervals appropriate to the chosen tree species and region to ensure maximum shade for pedestrians.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p>Evidence in landscape plans and statement from registered landscape architect.</p>
<h2>6.6 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.6.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>• economic goals and priorities for the community;</li> <li>• employment targets and the job balance ratio;</li> <li>• activities to be provided within the project (e.g. retail, industrial, commercial or community based);</li> <li>• socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>• how the project will contribute to the host local government area's socio-economic profile; and</li> <li>• net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	<p><i>Statement of compliance</i> from developer and evidence of community economic/employment strategy and implementation plan.</p>
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>6.6.2</b> Provide significant diversity of housing types including a mix of dwelling sizes (e.g. number of bedrooms) and/or densities of housing.</p> <p><b>6.6.3</b> Provide at least 10% of units, houses, blocks of land or house and land packages are <i>affordable</i> and are interspersed with other housing, not in a group together or isolated from other housing.</p>	<p>Evidence in plans and statement from developer including lot mix, and densities.</p> <p>Market analysis and unit, house, land and/or house and land package prices.</p>

Criteria	Required Supporting Documentation
<h2>6.7 FOOD SENSITIVE DESIGN</h2> <p><b>INTENT:</b> To provide opportunities for the local community to participate in producing or purchasing local food.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.7.1</b> Demonstrate a strategy for the delivery of permanent and viable growing spaces and/or related facilities which includes:</p> <ul style="list-style-type: none"> <li>• an engagement strategy for partnerships;</li> <li>• distribution methodology;</li> <li>• infrastructure provision; and</li> <li>• maintenance and ownership arrangements.</li> </ul> <p><b>Note:</b> Credit is also given where a project is contributing (either financial or human resources) towards the establishment or ongoing maintenance of an appropriate facility outside the project boundary.</p>	Statement from developer and registered landscape architect.
<h2>6.8 CONNECTED COMMUNITIES</h2> <p><b>INTENT:</b> To provide integrated communities to meet local needs and reduce the number of private car trips required.</p> <p><b>REQUIREMENT:</b> Locate near (such that 75% of residences/workplaces are within 1km by foot) or provide within two years of the first residential occupancy at least FIVE of the following local services.</p> <p><b>Note:</b> Local facilities should be co-located near public transport stops and pathways.</p>	
<b>6.8.1</b> Newsagent	Evidence in plans, including walking distances.
<b>6.8.2</b> Grocery/corner store	
<b>6.8.3</b> Primary school	
<b>6.8.4</b> Secondary school	
<b>6.8.5</b> University	
<b>6.8.6</b> Kindergarten, preschool, or childcare	
<b>6.8.7</b> Medical practice	
<b>6.8.8</b> Chemist	
<b>6.8.9</b> Specialty stores	
<b>6.8.10</b> Cafes and/or restaurants	
<b>6.8.11</b> Community centre	
<b>6.8.12</b> Dog park	
<b>6.8.13</b> Public transport hub	
<b>6.8.14</b> Bank or cash machine	
<b>6.8.15</b> Post office	
<b>6.8.16</b> Emergency services (including rural fire brigade, ambulance, police)	
<b>6.8.17</b> Communication centre or business centre	
<b>6.8.18</b> Community accessible facilities/spaces (e.g. rooms, public areas, education centres)	
<b>6.8.19</b> Public toilets	
<b>6.8.20</b> Farmer's markets	
<b>6.8.21</b> Community garden	



Criteria	Required Supporting Documentation
<b>6.9 SAFE AND ACCESSIBLE LIVING</b> <b>INTENT:</b> To provide facilities and housing which are appropriate and accessible for a variety of people. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.9.1</b> Achieve in at least 75% of dwellings ‘Silver’ performance levels under the Livable Housing Australia’s ‘Livable Housing Design Guidelines’.	Evidence in <i>design guidelines</i> or plans.
<b>6.10 HEALTHY AND ACTIVE COMMUNITIES</b> <b>INTENT:</b> To design and delivery communities which promote community-based physical activity and support healthy lifestyle behaviours. <b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.10.1</b> Coordinate opportunities for active events and groups which encourage physical activity and interaction.	Evidence in plans and statement from planner.
<b>6.10.2</b> Provide a number of parks throughout the neighbourhood, catering for a range of uses and people of varying ages and abilities.	Evidence in plans and statement from planner.
<b>6.10.3</b> Provide active travel links that are attractive, safe, direct and convenient to ensure permeability, creating better accessibility towards a destination.	Evidence in plans and statement from planner.



JellyFish® filter performance summary

Pollutant	Median reduction
TSS	85%
TP	59%
TN	51%
Cu	90%
Zn	70%
Oil and grease	62%

Reference: University of Florida (2011).

# JellyFish® filter

The JellyFish® filter is a tertiary stormwater treatment system featuring membrane filtration to provide exceptional pollutant removal at high treatment flow rates.

Call 1300 361 601 or visit [humes.com.au](http://humes.com.au) for more information.

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# Multi-Unit Residential



Project: Botanica Residences

Developer: ARIA Property Group

Certification: 6 elements (ecosystems, waste, energy, materials, water, community)

Certified 2013

# 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 1.3.3-1.3.12 under Urban Ecology (1.3).

## Criteria

## Required Supporting Documentation

### 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides and herbicides.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

### 1.2 EARTHWORKS

**INTENT:** To reduce the disturbance of construction works on the site's natural topography and nearby waterways.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Conduct thorough site analysis prior to planning and design to identify:

- areas of prime ecological significance;
- areas where clearing and/or major earthworks should specifically not occur;
- potential soil issues (e.g. dispersive soils); and
- the suitability of the site for earthworks and construction.

Site analysis outlining areas which require protection.

The project must adequately consider and preserve significant areas based on the advice of this report.



Criteria	Required Supporting Documentation
<p><b>1.2.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.</p> <p><b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p>	Statement from engineer.
<p><b>1.2.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant Federal, State and Local legislative and regulatory requirements.</p>	Erosion and sediment control plan/soil and water management plan, staging plan and <i>statement of compliance</i> from an <i>appropriately qualified professional</i> .
<p><b>1.2.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p>	Statement from engineer.
<p><b>1.2.5</b> Design and construct street layout to fit with topography with minimal disruption.</p> <p><b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.</p>	Pre and post civil contour maps.
<p><b>1.2.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	Contamination report and details on remediation actions.
<h3>1.3 URBAN ECOLOGY</h3> <p><b>INTENT:</b> 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.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> 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.</p>	Statement from registered landscape architect/horticulturalist.
<p><b>1.3.2</b> Reduce urban heat island effect. This could be through:</p> <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction (e.g. open-grid pavement);</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	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.
<p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>1.3.3</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.</p> <p><b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.</p> <p><b>3 credits</b> – <i>brownfield site</i>.</p>	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.
<p><b>1.3.4</b> The project is a refurbishment (<b>2 credits</b>).</p>	Details of existing use and pre and post refurbishment building envelope.

Criteria	Required Supporting Documentation
<p><b>1.3.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i>, or for landscaping private areas prior to sale are <i>locally native</i>. 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.</p> <p><b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.</p>	Landscape palette and statement from registered landscape architect.
<p><b>1.3.6</b> Include green roofs or green walls, incorporating native plants species into the project. Species selection should be informed by an <i>appropriately qualified professional</i> and should be designed to improve ecological function. A maintenance plan and non-potable irrigation supply should also be in place.</p>	Details on size, location and featured species. Statement from registered landscape architect and/or ecologist regarding how the green wall/roof will improve ecological function.
<p><b>1.3.7</b> Incorporate community and productive gardens in the project including space for garden plots, communal or individual vegetable gardens.</p>	Details on the location, maintenance and management of the community/productive gardens.
<p><b>1.3.8</b> Demonstrate that the planting palette for the project contains a mix of fast and slow growing species.</p>	Statement from registered landscape architect.
<p><b>1.3.9</b> Demonstrate appropriate consideration of viable planting spaces by:</p> <ul style="list-style-type: none"> <li>• utilising appropriate media with low organic content (5% or less);</li> <li>• utilise appropriate species for planting which address functionality requirements; and</li> <li>• demonstrate appropriate consideration of soil depths for the proposed or existing plantings.</li> </ul>	Statement from registered landscape architect.
<p><b>1.3.10</b> Minimise noise pollution during and post construction.</p>	Construction management plan.
<p><b>1.3.11</b> A minimum of 10% (or greater than regulatory standard) of the site is allocated for <i>deep planting</i>.</p>	Statement from registered landscape architect.
<p><b>1.3.12</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.



## Multi-Unit Residential – Waste

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

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- Under Post Construction (2.3):
  - Low Density Projects ( $\leq 2$  Storeys) – meet 2.3.1; or
  - High Density Projects ( $\geq 3$  Storeys) – **one** credit from 2.3.2-2.3.3.

### Criteria

### Required Supporting Documentation

## 2.1 ESSENTIAL ACTION

**INTENT:** To identify the most suitable opportunities for recycling of resources available to the site.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. Statement of compliance from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

## 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the works. At a minimum, the waste management plan should include the following:

- waste generation,
- waste systems,
- minimisation strategy,
- performance/reduction targets,
- bin quantity and size,
- collection frequency,
- waste contractors,
- waste management facilities shown on plans, signage, and
- monitoring and reporting including frequency and method.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

**2.2.3** Recycle or reuse at least 60% of all built form construction waste (by volume).

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.

Evidence of a waste management plan. Quarterly reports, including waste records should be kept for compliance purposes.



Criteria	Required Supporting Documentation
<p><b>2.2.4</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p>	<p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for end users to reduce waste going to landfill.</p> <p><b>LOW DENSITY PROJECTS (<math>\leq 2</math> STOREYS)</b></p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>2.3.1</b> Provide a compost bin, worm farm and/or green bin or similar initiative for each dwelling or for the complex (i.e. in a communal area).</p>	<p><i>Statement of compliance</i> from developer and evidence in plans of dedicated space.</p>
<p><b>HIGH DENSITY PROJECTS (<math>\geq 3</math> STOREYS)</b></p> <p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>2.3.2</b> Where waste chutes are provided for general waste, chutes are also provided for recycling.</p>	<p>Evidence in plans and statement from local authority, architect or building designer.</p>
<p><b>2.3.3</b> Dedicated storage for the separation, collection and recycling of waste is provided and is easily accessible by all building occupants.</p>	<p>Evidence in plans and statement from local authority, architect or building designer.</p>



## Multi-Unit Residential – Energy

To achieve certification in the Energy element, a *project* must achieve:

- **all** of the requirements under Climate Responsive Design (3.1);
- 3.2.1 under Daylighting (3.2);
- 3.3.1 under Submetering (3.3);
- 3.4.1 under Common Area Lighting (3.4);
- if the project includes any total enclosed or semi-enclosed carparks, **all** of the requirements under Carparks (3.5);
- if the project includes any lift systems, **all** of the requirements under Lift Systems (3.6);
- **two** credits from 3.7.1-3.7.5 or meet 3.7.6 under Reduction in Greenhouse Gas Emissions (3.7); and
- if the project includes any *community facilities*, **all** the requirements under Community Facilities (3.8).

### Criteria

### Required Supporting Documentation

## 3.1 CLIMATE RESPONSIVE DESIGN

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

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** The project must be orientated to demonstrate positive passive design outcomes are maximised.

Provide evidence that building orientation, including the positioning of fenestration/access points, and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), overshadowing, glare and privacy.

**3.1.2** The project is designed to minimise adverse conditions, including negative microclimatic factors.

Statement from planner/architect/designer/engineer with reference to specific examples.

**3.1.3** The design of public spaces optimises microclimatic conditions at all times of the year.

Statement from planner/architect/designer/engineer with reference to specific examples.

## 3.2 DAYLIGHTING

**INTENT:** To ensure buildings provide daylighting benefits to occupants.

**REQUIREMENT:** Achieve the following:

**3.2.1** Optimise opportunities for daylight penetration into dwellings through measures such as, but not limited to:

- light shelves;
- use of light colours; and/or
- dual aspect design.

Statement from architect.

## 3.3 SUBMETERING

**INTENT:** To ensure each occupant has the opportunity to monitor and manage energy usage.

**REQUIREMENT:** Achieve the following:

**3.3.1** Each individual residential unit is sub-metered.

Evidence in electrical plans with *statement of compliance* from engineer or developer.

## 3.4 COMMON AREA LIGHTING

**INTENT:** To ensure common areas are lit using energy efficient lighting.

**REQUIREMENT:** Achieve the following:

**3.4.1** Provide efficient lighting in common areas through utilising solar power, fluorescent or LED fittings.

Evidence in masterplan or electrical plans with *statement of compliance* from engineer or developer.

Criteria	Required Supporting Documentation
<h3>3.5 CARPARKS</h3> <p><b>INTENT:</b> To reduce the energy usage associated with ventilating carparks within buildings.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>3.5.1</b> Install carbon monoxide monitoring/controls to carpark exhaust systems.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer.
<p><b>3.5.2</b> 25% of the total enclosed/semi-enclosed carpark by area is naturally ventilated, or 50% of the total enclosed/semi-enclosed carpark has either passive supply or passive exhaust.</p>	Statement from engineer and evidence in plans.
<h3>3.6 LIFT SYSTEMS</h3> <p><b>INTENT:</b> To reduce the energy usage of lift systems within buildings.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.6.1</b> Where lifts are installed in the project, demonstrate consideration of lift power systems that are energy efficient and environmentally friendly. This includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>• use of regenerative drives;</li> <li>• machine room-less elevators;</li> <li>• dispatch control systems;</li> <li>• intelligent automation; and/or</li> <li>• stand-by modes.</li> </ul>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<h3>3.7 REDUCTION IN GREENHOUSE GAS EMISSIONS</h3> <p><b>INTENT:</b> To reduce greenhouse gas emissions within the project.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options, or meet 3.7.6:</p>	
<p><b>3.7.1 Alternative Energy Sources</b> Provision of solar power (or other non-polluting, renewable power source) to service at least 70% of the common area energy requirements.</p>	Statement from engineer showing capacity and supporting guidance within <i>design guidelines</i> regarding optimal positioning for performance.
<p><b>3.7.2 Water Heating and Appliances</b> Mandated use of:</p> <ul style="list-style-type: none"> <li>• gas hot water;</li> <li>• heat pump; or</li> <li>• solar hot water (gas or electric boosted).</li> </ul> <p>And, mandated use of appliances which produce less greenhouse gas emissions. This should include at a minimum:</p> <ul style="list-style-type: none"> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum; and</li> <li>• air conditioning systems with a <i>COP</i> of <math>\geq 3.20</math> and <i>EER</i> of <math>\geq 3.00</math>.</li> </ul>	<p><i>Statement of compliance</i> from developer.</p> <p>Appliance palette including product manufacturer, number and energy star rating and/or <i>COP</i> and <i>EER</i>.</p>
<p><b>3.7.3 NatHERS Rating</b> Units within the project achieve a star rating of at least 6 star NatHERS rating on average.</p>	<i>Design guidelines</i> and supporting evidence of energy efficiency using BERS, Accurate, FirstRate5 or NABERS or similar with ABSA (Association of Building Sustainability Assessors) certificate using second generation software systems' thermal calculation method.



Criteria	Required Supporting Documentation
<b>3.7.4 Lighting</b> A minimum of 300 lux is achieved on the surface (nominally 900mm above floor level) using energy efficient lighting in the following: <ul style="list-style-type: none"> <li>• kitchen sink;</li> <li>• cooktop or stove; and</li> <li>• vanity basins in bathrooms and ensuites.</li> </ul>	Statement from electrical engineer/designer.
<b>3.7.5 Demand/Behavioural Management</b> This may include: <ul style="list-style-type: none"> <li>• technology including sensors, timers, etc.;</li> <li>• education using community-based social marketing and use of normative messaging, end user manual, community workshop; and/or</li> <li>• use of load monitoring devices to provide feedback (e.g. energy monitors).</li> </ul>	Evidence in <i>design guidelines</i> or electrical plans with <i>statement of compliance</i> from engineer or developer. Evidence of end user manual and proposed structure of end user education program.
ALTERNATIVE COMPLIANCE	
<b>3.7.6 Reduction through Other Means</b> Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.	Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements (i.e. calculations on the energy balance).
<b>3.8 COMMUNITY FACILITIES</b> <b>INTENT:</b> To reduce energy usage in <i>community facilities</i> . <b>REQUIREMENT:</b> Where the project includes <i>community facilities</i> , achieve EACH of the following:	
<b>3.8.1</b> Where swimming pools are installed in the project, demonstrate consideration of pump systems that are energy efficient and environmentally friendly. This includes but is not limited to: <ul style="list-style-type: none"> <li>• variable speed control;</li> <li>• variable-frequency drives; or</li> <li>• variable-speed pumps.</li> </ul>	Statement from developer.
<b>3.8.2</b> In <i>community facilities</i> utilise (where relevant): <ul style="list-style-type: none"> <li>• energy efficient lighting (e.g. LED or Compact Fluorescent Lamp); and</li> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum;</li> </ul> OR <ul style="list-style-type: none"> <li>• provision of solar power (or other non-polluting, renewable power source).</li> </ul>	Statement from developer.  Appliance palette including product manufacturer, number and energy star rating.  Statement from engineer and relevant plans.

# Multi-Unit Residential – Materials

To achieve certification in the Materials element, a *project* must achieve:

- **two** requirements from the 'Civil Works' (4.1.1–4.1.4) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1);
- **three** requirements from the 'Built Form' (4.1.5–4.1.8) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1); and
- **two** credits from 4.2.1–4.2.5 under Emissions (4.2).

## Criteria

## Required Supporting Documentation

### 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

#### CIVIL WORKS

##### 4.1.1 Roads

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base

Statement from supplier and supporting technical information.

##### 4.1.2 Services

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

Statement from quantity surveyor and/or supplier and supporting technical information.

##### 4.1.3 Hard Landscaping

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.

Statement from supplier and supporting technical information.

##### 4.1.4 Soft Landscaping

Throughout the project:

- any vegetative debris from the site is mulched and reused; and
- any non-contaminated topsoil is stockpiled and reused within the site.

Statement from landscape architect, including details of quantities, uses and attributes.





Criteria	Required Supporting Documentation
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate;  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated.</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials;</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and/or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	Statement from quantity surveyor and/or supplier and supporting technical information.
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	Statement from supplier and supporting technical information.

Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>• ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>• ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (kgCO<sub>2</sub>e/occupant/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<p><b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are EO rated.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>



## Multi-Unit Residential – Water

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

- **two** credits from 5.1.1-5.1.5 or meet 5.1.4 under Reduction in Potable Water Demand (5.1);
- 5.2.1 under Submetering (5.2); and
- **all** of the requirements under Irrigation Requirements (5.3); and
- if the project includes any *community facilities*, **all** of the requirements under Community Facilities (5.4).

### Criteria

### Required Supporting Documentation

## 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce household *potable water* consumption.

**REQUIREMENT:** Achieve at least TWO credits from the following options, or meet 5.1.4:

**5.1.1** Project is connected to a non-potable water supply which is plumbed to dwellings for toilet use at a minimum.

Statement from engineer and relevant plans.

**5.1.2** At a minimum fixtures must include:

- showerheads that use ≤6 litres per minute; and
- taps to bathrooms, kitchen and laundry that use ≤6 litres per minute.

Finishes palette including product manufacturer, number and WELS rating.

**5.1.3** Water efficient appliances installed within dwellings which include, where installed, a dishwasher with a water consumption of ≤14 litres per use.

Appliance palette including product manufacturer, number and WELS rating.

### ALTERNATIVE COMPLIANCE

**5.1.4** Reduce potable water usage within the project (excluding common area irrigation requirements captured in 5.3.1) by at least 20% more than required under relevant Federal and State government regulatory means.

Worked calculations showing how initiatives will achieve at least 20% reduced potable water usage compared to regulatory compliance.

## 5.2 SUBMETERING

**INTENT:** To ensure each occupant has the opportunity to monitor and manage water usage.

**REQUIREMENT:** Achieve the following:

**5.2.1** Each individual unit is sub-metered.

Evidence in plans with *statement of compliance* from engineer or developer.

Criteria	Required Supporting Documentation
<b>5.3 IRRIGATION REQUIREMENTS</b> <b>INTENT:</b> To reduce the use of <i>potable water</i> for irrigation purposes in the public realm. <b>REQUIREMENT:</b> Achieve EACH of the following:	
<b>5.3.1</b> Use drought tolerant species which have no irrigation requirements for the public realm.  Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through: <ul style="list-style-type: none"> <li>• stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);</li> <li>• plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);</li> <li>• greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);</li> <li>• rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or</li> <li>• use of underground water sources.</li> </ul> <b>Note:</b> the following exemptions may apply: <ul style="list-style-type: none"> <li>• <i>potable water</i> used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover); and</li> <li>• <i>potable water</i> used to irrigate non-commercial food production gardens.</li> </ul>	Landscape palette and statement from landscape architect.  Certification by engineer or local government engineer or development assessment officer or other <i>appropriately qualified professional</i> (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)  If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.
<b>5.3.2</b> Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage. Mulch must be applied to planted areas and maintained.	Irrigation plan or statement from landscape architect regarding irrigation methods.
<b>5.3.3</b> Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.	Statement from registered landscape architect.
<b>5.3.4</b> Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.	Statement from registered landscape architect.
<b>5.4 COMMUNITY FACILITIES</b> <b>INTENT:</b> To reduce <i>potable water</i> usage in <i>community facilities</i> . <b>REQUIREMENT:</b> Where the project includes <i>community facilities</i> , achieve EACH of the following:	
<b>5.4.1</b> Where an outdoor swimming pool is included within the project, a pool blanket is included.	Statement from developer.
<b>5.4.2</b> Where a swimming pool is included within the project, ensure there is a backwash minimisation system in place (e.g. cartridge filter, filter utilising cyclone technology, oversized sand filter, centrifugal/pre-filter device, backwash recycling system or similar).	Statement from developer.
<b>5.4.3</b> In <i>community facilities</i> utilise (where relevant): <ul style="list-style-type: none"> <li>• waterless urinals;</li> <li>• taps with water usage of <math>\leq 6</math> litres per minute; and</li> <li>• dishwashers with a water consumption of <math>\leq 14</math> litres per use.</li> </ul> OR <ul style="list-style-type: none"> <li>• connect to a non-potable water source for indoor non-drinking water uses.</li> </ul>	Statement from engineer and relevant plans.



## Multi-Unit Residential – 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 **five** of the following sections:
  - Community Consultation, Planning and Development (6.2)
  - Ongoing Community Engagement, Governance and Activation (6.3)
  - Efficient and Accessible Transport (6.4)
  - Engaging and Inclusive Public Realm (6.5)
  - Community Prosperity (6.6)
  - Connected Communities (6.7)
  - Safe and Accessible Living (6.8)
  - Healthy and Active Communities (6.9)

### Criteria

### Required Supporting Documentation

## 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability and liveability goals including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between residents/visitors and other local people using the area, according to Crime Prevention Through Environmental Design (*CPTED*).

Evidence in plans, and statement from planner.

## 6.2 COMMUNITY CONSULTATION, PLANNING AND DEVELOPMENT

**INTENT:** To proactively and meaningfully engage in effective and informed consultation with the local community.

**REQUIREMENT:** Achieve EACH of the following:

**6.2.1** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Consultation/stakeholder engagement strategy.

**6.2.2** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

**6.2.3** Consider and appropriately conserve and/or recognise and respect indigenous and post-European cultural heritage. Cultural heritage investigations should be conducted in accordance with the minimum standards outlined in the Burra Charter (1999) using the services of appropriately qualified professionals.

Evidence of recognition and protection or considerate reuse of cultural heritage sites or structures (and artefacts) if applicable and in keeping with advice from traditional owners, long-term locals or historical advisors.

This could include:

- evidence of voluntary liaison with traditional owner, if such a group can be identified, and the consideration of Indigenous cultural values in the processes, design and construction of the project; and/or
- evidence of consideration of significant post European cultural heritage, such as retaining significant trees, fences, old machinery and structures of significance, interpretive signage, research of site history and publication, promotion and incorporation in the design and naming of elements.



Criteria	Required Supporting Documentation
<b>6.3 ONGOING COMMUNITY ENGAGEMENT, GOVERNANCE AND ACTIVATION</b> <b>INTENT:</b> To ensure the project adequately plans and delivers a structure and framework which supports ongoing community cohesion and resilience as a socially sustainable community. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.3.1</b> Establish a structure or framework for ongoing community involvement and establish ongoing partnerships with the broader community. The framework should include some of the activities listed in 6.3.2-6.3.7 and commence within one year of the occupation of the first dwelling and include a plan to encourage continued community involvement.	Evidence of structure and framework including a list of measurables and delivery timeframes.
<b>REQUIREMENT:</b> Achieve at least FOUR credits from the following options, or identify other actions appropriate to the local context:	
<b>6.3.2</b> Facilitate community grants programs.	Details of programs including financial investment and timeframes.
<b>6.3.3</b> Sponsor, facilitate and/or provide local community groups/events. May be within the project or supporting the surrounding community.	Details including schedule, purpose and nature of the sponsorship.
<b>6.3.4</b> Involve local trainees in construction activities.	Details including arrangements and planned activities and timeframes.
<b>6.3.5</b> Engage with local environmental groups/catchment organisations for ongoing community-based environmental restoration and maintenance activities.	Details including arrangements and planned activities and timeframes.
<b>6.3.6</b> Provide or support an existing resource (e.g. <i>community development officer</i> or program) to facilitate and support community development.	Details including responsibilities, level of commitment and hours of commitment.
<b>6.3.7</b> Demonstrate the strategies and actions which are creating and facilitating a connected community.	Details including timeframes and structure.
<b>6.4 EFFICIENT AND ACCESSIBLE TRANSPORT</b> <b>INTENT:</b> To reduce reliance on private cars as the primary mode of transport. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.4.1</b> Demonstrate encouragement of active transport options amongst the community.	Details of programs including timeframes.
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.4.2 Bicycle Parking</b> Provide one secure bicycle rack per dwelling and provide bicycle parking at all community facilities and retail/commercial businesses within the project at a rate of one space per 500sqm of GFA. Place bicycle parking in public view and easily accessible from the road.	Evidence in plans, and statement from masterplanner and developer stating how the requirements have been met.
<b>6.4.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathway spaces (including streets and open spaces). Also connect with paths in neighbouring areas, properties and facilities. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.	Evidence in plans, and statement from landscape architect and developer stating how the requirements have been met.



Criteria	Required Supporting Documentation
<p><b>6.4.4 Active Transport Linkages</b> Provide shared pathways for both walking and cycling. The width of the pathway should be a minimum of 3m and designed appropriately for the anticipated level of pedestrian and bicycle use, and the likely speed of cyclists and the required clearances.</p> <p>OR</p> <p>Provide pathways on both sides of all roads within the project.</p>	<p>Evidence in plans and/or statement on how the requirements have been met.</p>
<p><b>6.4.5 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within:</p> <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> <p>The stop/station must be serviced by at least ten services per weekday (by the time the buildings within the project are 50% occupied) to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.</p>	<p>Evidence of existing transport location/s and frequency of service. If public transport stop is proposed, details of proposal to local government and negotiations to date should be provided.</p> <p>Evidence including arrangements and frequency.</p> <p>Evidence including distribution and eligibility.</p>
<p><b>6.4.6 Community Transport</b> Provide a community transport network such as car share, car pool or community minibus to facilities.</p>	<p>Evidence including the location, arrangements and provider of scheme.</p>
<p><b>6.4.7 Low-Emitting and Fuel-Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles within the project for 5% of the total vehicle parking capacity of each site.</p>	<p>Evidence including the location and number of parks.</p>
<h2>6.5 ENGAGING AND INCLUSIVE PUBLIC REALM</h2> <p><b>INTENT:</b> To ensure the delivery of a high quality public realm and private open space which provides attractive and accessible areas for the occupants to recreate and engage.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>6.5.1</b> A common area is provided within the project which is designed to encourage interaction amongst residents. The common area should include at least three of the following:</p> <ul style="list-style-type: none"> <li>• community meeting space;</li> <li>• composting facilities;</li> <li>• communal or individual garden plots;</li> <li>• worm farm facilities;</li> <li>• in-ground deep soil planting;</li> <li>• playground area;</li> <li>• sun-shaded area with seating;</li> <li>• outdoor gym;</li> <li>• outdoor dining; and/or</li> <li>• barbecue facilities.</li> </ul>	<p>Evidence in plans and statement from landscape architect and/or architect.</p>
<p><b>6.5.2</b> Provide private external space to at least 90% of dwellings. The space must be equivalent in size to at least 15% of the area of each dwelling, or at least 2 x 3m (whichever is the greater). It must be directly adjacent and accessible from the dwelling(s).</p>	<p>Statement from architect and evidence in plans.</p>

Criteria	Required Supporting Documentation
<h2>6.6 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.6.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>• economic goals and priorities for the community;</li> <li>• employment targets and the job balance ratio;</li> <li>• activities to be provided within the project (e.g. retail, industrial, commercial or community based);</li> <li>• socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>• how the project will contribute to the host local government area's socio-economic profile; and</li> <li>• net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	<p><i>Statement of compliance</i> from developer and evidence of community economic/employment strategy and implementation plan.</p>
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>6.6.2</b> Provide significant diversity of dwelling types and sizes (e.g. number of bedrooms).</p>	<p>Evidence in plans and statement from developer including dwelling types and sizes.</p>
<p><b>6.6.3</b> Provide at least 10% of dwellings as <i>affordable</i>. <i>Affordable</i> dwellings must be interspersed with other dwellings, not in a group together or isolated from other housing.</p>	<p>Market analysis and unit prices.</p>
<h2>6.7 CONNECTED COMMUNITIES</h2> <p><b>INTENT:</b> To provide integrated communities to meet local needs and reduce the number of private car trips required.</p> <p><b>REQUIREMENT:</b> Locate near (such that 75% of residences/workplaces are within 1km by foot) or provide within two years of the first residential occupancy at least FIVE of the following local services.</p> <p><b>Note:</b> Local facilities should be co-located near public transport stops and pathways.</p>	
<p><b>6.7.1</b> Newsagent</p>	<p>Evidence in plans, including walking distances.</p>
<b>6.7.2</b> Grocery/corner store	
<b>6.7.3</b> Primary school	
<b>6.7.4</b> Secondary school	
<b>6.7.5</b> University	
<b>6.7.6</b> Kindergarten, preschool or childcare	
<b>6.7.7</b> Medical practice	
<b>6.7.8</b> Chemist	
<b>6.7.9</b> Specialty stores	
<b>6.7.10</b> Cafes and/or restaurants	
<b>6.7.11</b> Community centre	
<b>6.7.12</b> Dog park	
<b>6.7.13</b> Public transport hub	



Criteria	Required Supporting Documentation
<p><b>6.7.14</b> Bank or cash machine</p> <p><b>6.7.15</b> Post office</p> <p><b>6.7.16</b> Emergency services (including rural fire brigade, ambulance, police)</p> <p><b>6.7.17</b> Communication centre or business centre</p> <p><b>6.7.18</b> Community accessible facilities/spaces (e.g. rooms, public areas, education centres)</p> <p><b>6.7.19</b> Public toilets</p> <p><b>6.7.20</b> Farmer's markets</p> <p><b>6.7.21</b> Community garden</p>	
<h2>6.8 SAFE AND ACCESSIBLE LIVING</h2> <p><b>INTENT:</b> To provide facilities and housing which are appropriate and accessible for a variety of people.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.8.1</b> Achieve in at least 50% of dwellings 'Silver' performance levels under the Livable Housing Australia's 'Livable Housing Design Guidelines'.</p>	Evidence in plans, and statement from architect or building designer and developer.
<p><b>6.8.2</b> All common areas are universally accessible.</p>	Evidence in plans, and statement from architect.
<h2>6.9 HEALTHY AND ACTIVE COMMUNITIES</h2> <p><b>INTENT:</b> To design and deliver communities which promote community-based physical activity and support healthy lifestyle behaviours.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>6.9.1</b> Ensure all dwellings have access to neighbourhood parks within 400m (or a five minute walk) for a pocket park, and up to 800m (or a ten minute walk) for playing fields.</p>	Evidence in plans and statement from planner.
<p><b>6.9.2</b> Provide active travel links that are attractive, safe, direct and convenient to ensure permeability, creating better accessibility towards a destination.</p>	Evidence in plans and statement from planner.
<p><b>6.9.3</b> Ensure the location and management of parking does not undermine the comfort and safety of pedestrians.</p>	Evidence in plans and statement from planner.
<p><b>6.9.4</b> Provide support facilities to encourage interaction and useability including seating, water fountains, shelter, public toilets and signage.</p>	Evidence in plans and statement from planner.

# INNOVATION FROM THE GROUND UP

## PLANTUP GREENWALLS AND GREENROOFS



### SYSTEMS

Plantup Pty Ltd provide greenwall and greenroof systems applicable to all residential, commercial, industrial and mixed-use developments. As leaders in this emerging industry, Plantup Pty Ltd recognise and promote eco-efficiency and greater sustainability, providing a complete design and construct service. Our standard products can be applied to new builds, retrofitted to existing buildings or custom designed, pre-grown offsite and delivered into interior and exterior projects nationwide.

### PRODUCTS

Greenwalls  
Greenroofs  
Greenwall Maintenance

### SERVICES



Consultation



Design



Documentation



Installation



Maintenance

### CONTACT

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# Mixed Use

An architectural rendering of a mixed-use waterfront development. The scene features a modern multi-story apartment building with balconies in the background. In the foreground, there is a waterfront promenade with a wooden deck, a paved walkway, and a grassy area. People are shown walking, sitting, and standing in various areas. A large, mature tree with red flowers stands prominently. A white motorboat is docked at a wooden pier in the water. The overall atmosphere is vibrant and community-oriented.

Project: Port Coogee  
Developer: Australand  
Certification: 3 elements (ecosystems, water, community)  
Certified 2013



# 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 1.4.3-1.4.12 under Urban Ecology (1.4).

## Criteria

## Required Supporting Documentation

### 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides and herbicides.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

### 1.2 SOIL HEALTH

**INTENT:** To ensure construction practices retain the ecological integrity of the soil to assist in achieving better environmental outcomes in the public realm.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Take soil samples in areas that are to be retained for vegetative growth to ensure an understanding of soil characteristics. For soils used for revegetation purposes, the organic content of the soil, pH and nutrient status shall be similar to that of undisturbed native soils of ecosystems that support the appropriate plant species intended for the site.

Soil or landscape management plan, including test results.



Criteria	Required Supporting Documentation
<p><b>1.2.2</b> Unless soil is heavily contaminated, retain insitu or stockpile and reuse all topsoil to best advantage on site. Where topsoil is minimal or absent and subsoil is deemed suitable for amendment, stockpile subsoil on site.</p> <p><b>Note:</b> Wherever possible, stockpiles should be no more than 1.5m high with maximum 1:2 batter and once stockpiling completed, covered with a green cover crop to avoid erosion, desiccation and solarisation.</p>	Evidence in plans of topsoil stockpile location and management requirements.
<p><b>1.2.3</b> Minimise access to site by vehicles to nominated roadways or parking areas, well away from existing trees or intended public realm areas, to minimise compaction. Rip compacted soil once building works are completed. Ensure building wastes, particularly liquid wastes do not contaminate the soil.</p>	Construction management plan, identifying access locations.
<p><b>1.2.4</b> Recycle and reuse all vegetative debris on site (e.g. for topsoil augmentation or composting purposes). If onsite reuse is not feasible, arrangements should be made for green waste to be transported for reuse or disposed of at a fully licensed recycler or reprocessor. There should be no pit burning of green waste on site or disposal to landfill.</p>	Statement from developer and registered landscape architect.
<p><b>1.2.5</b> Amend, mulch and revegetate soils disturbed during construction as well as soils on the remainder of the site where the site has formerly been used for farming, forestry, industrial, commercial or urban land uses. Demonstrate that soils are suitable for intended purposes.</p>	Soil or landscape management plan.
<h3>1.3 EARTHWORKS</h3> <p><b>INTENT:</b> To reduce the disturbance of construction works on the site's natural topography and nearby waterways.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> Conduct thorough site analysis prior to planning and design to identify:</p> <ul style="list-style-type: none"> <li>• areas of prime ecological significance;</li> <li>• areas where clearing and/or major earthworks should specifically not occur;</li> <li>• potential soil issues (e.g. dispersive soil); and</li> <li>• the suitability of the site for earthworks and construction.</li> </ul> <p>The project must adequately consider and preserve significant areas based on the advice of this report.</p>	Site analysis outlining areas which require protection.
<p><b>1.3.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.</p> <p><b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p>	Statement from engineer.
<p><b>1.3.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant Federal, State and Local legislative and regulatory requirements.</p>	Erosion and sediment control plan/soil and water management plan, staging plan and <i>statement of compliance</i> from an <i>appropriately qualified professional</i> .
<p><b>1.3.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p>	Statement from engineer.

Criteria	Required Supporting Documentation
<p><b>1.3.5</b> Design and construct street layout to fit with topography with minimal disruption.</p> <p><b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.</p> <p><b>1.3.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	<p>Pre and post civil contour maps.</p> <p>Contamination report and details on remediation actions.</p>
<h2>1.4 URBAN ECOLOGY</h2> <p><b>INTENT:</b> 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.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.4.1</b> 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.</p> <p><b>1.4.2</b> Reduce urban heat island effect. This could be through:</p> <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction (e.g. open-grid pavement);</li> <li>• incorporation of breezeways and greenways;</li> <li>• provision of shading to roads, footpaths and bicycle paths;</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	<p>Statement from registered landscape architect/horticulturalist.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and plans.</p>
<p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>1.4.3</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.</p> <p><b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.</p> <p><b>3 credits</b> – <i>brownfield site</i>.</p> <p><b>1.4.4</b> The project is a refurbishment (<b>2 credits</b>).</p> <p><b>1.4.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i>, or for landscaping private areas prior to sale are <i>locally native</i>. 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.</p> <p><b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.</p> <p><b>1.4.6</b> Include green roofs or green walls, incorporating native plants species into the project. Species selection should be informed by an <i>appropriately qualified professional</i> and should be designed to improve ecological function. A maintenance plan and non-potable irrigation supply should also be in place.</p>	<p>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.</p> <p>Details of existing use and pre and post refurbishment building envelope.</p> <p>Landscape palette and statement from registered landscape architect.</p> <p>Details on size, location and featured species. Statement from registered landscape architect and/or ecologist regarding how the green wall/roof will improve ecological function.</p>



Criteria	Required Supporting Documentation
<p><b>1.4.7</b> Incorporate community and productive gardens in the project including space for garden plots, communal or individual vegetable gardens.</p>	Details on the location, maintenance and management of the community/productive gardens.
<p><b>1.4.8</b> Demonstrate that the planting palette for the project contains a mix of fast and slow growing species.</p>	Statement from registered landscape architect.
<p><b>1.4.9</b> Demonstrate appropriate consideration of viable planting spaces by:</p> <ul style="list-style-type: none"> <li>• utilising appropriate media with low organic content (5% or less);</li> <li>• utilise appropriate species for planting which address functionality requirements; and</li> <li>• demonstrate appropriate consideration of soil depths for the proposed or existing plantings.</li> </ul>	Statement from registered landscape architect.
<p><b>1.4.10</b> Minimise noise pollution during and post construction.</p>	Construction management plan.
<p><b>1.4.11</b> A minimum of 10% (or greater than regulatory standard) of the site is allocated for <i>deep planting</i>.</p>	Statement from registered landscape architect.
<p><b>1.4.12</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	<p>When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.</p>



## Mixed Use – Waste

To achieve certification in the Waste element, a *project* must achieve:

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- **one** credit from 2.3.1-2.3.3 under Post-Construction Phase (2.3).

### Criteria

### Required Supporting Documentation

## 2.1 ESSENTIAL ACTION

**INTENT:** To ensure there is a clear strategy which facilitates the recycling of resources and reduces waste going to landfill.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. *Statement of compliance* from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

## 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the works. At a minimum, the waste management plan should include the following:

- waste generation;
- waste systems;
- minimisation strategy;
- performance/reduction targets;
- bin quantity and size;
- collection frequency;
- waste contractors;
- waste management facilities shown on plans;
- signage; and
- monitoring and reporting including frequency and method.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.



Criteria	Required Supporting Documentation
<p><b>2.2.3</b> Recycle or reuse at least 60% of all built form construction waste (by volume).</p> <p><b>2.2.4</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p>	<p>Evidence of a waste management plan. Quarterly reports, including waste records should be kept for compliance purposes.</p> <p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for end users to reduce waste going to landfill.</p> <p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>2.3.1</b> Where waste chutes are provided for general waste, chutes are also provided for recycling.</p> <p><b>2.3.2</b> Where the above is not relevant, dedicated storage for the separation collection and recycling of waste is provided and is easily accessible by all building occupants.</p> <p><b>2.3.3</b> Provide a compost bin, worm farm and/or green bin or similar initiative for the complex (i.e. in a communal area).</p>	<p>Evidence in plans and statement from local authority, architect or building designer.</p> <p>Evidence in plans and statement from local authority, architect or building designer.</p> <p><i>Statement of compliance</i> from developer and evidence in plans of dedicated space.</p>

## Mixed Use – Energy

To achieve certification in the Energy element, a *project* must achieve:

- **all** of the requirements under Climate Responsive Design (3.1);
- 3.2.1 under Daylighting (3.2);
- 3.3.1 under Submetering (3.3);
- **all** of the requirements under Common Area Lighting (3.4);
- 3.5.1 and **one** credit from 3.5.2-3.5.4 under HVAC (3.5);
- if the project includes any total enclosed or semi-enclosed carparks, **all** of the requirements under Carparks (3.6);
- if the project includes any lift systems, **all** of the requirements under Lift Systems (3.7);
- **two** credits from 3.8.1-3.8.6 or meet 3.8.7 under Reduction in Greenhouse Gas Emissions (3.8);
- if the project includes any commercial and/or retail areas, 3.8.8 under Reduction in Greenhouse Gas Emissions (3.8); and
- if the project includes any *community facilities*, **all** of the requirements under Community Facilities (3.9).

### Criteria

### Required Supporting Documentation

## 3.1 CLIMATE RESPONSIVE DESIGN

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

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** The project must be masterplanned and controlled through the development process to demonstrate that positive passive design outcomes are maximised.

Provide evidence that building orientation, including the positioning of fenestration/access points, and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), overshadowing, glare and privacy.

**3.1.2** The project is designed to minimise extremities in temperatures, including negative microclimatic factors.

Statement from planner/architect/designer/engineer with reference to specific examples.

**3.1.3** The design of *public spaces* optimises microclimatic conditions at all times of the year.

Statement from planner/architect/designer/engineer with reference to specific examples.

## 3.2 DAYLIGHTING

**INTENT:** To ensure buildings provide daylighting benefits to occupants.

**REQUIREMENT:** Achieve the following:

**3.2.1** Optimise opportunities for daylight penetration into dwellings and tenancies through measures such as, but not limited to:

- light shelves;
- use of light colours; and/or
- dual aspect design.

Statement from architect.

## 3.3 SUBMETERING

**INTENT:** To ensure each occupant has the opportunity to monitor and manage energy usage.

**REQUIREMENT:** Achieve the following:

**3.3.1** Each individual residential unit and commercial tenancy is sub-metered.

Evidence in plans with *statement of compliance* from engineer or developer.



Criteria	Required Supporting Documentation
<h3>3.4 COMMON AREA LIGHTING</h3> <p><b>INTENT:</b> To ensure common areas are lit using energy efficient lighting.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>3.4.1</b> Provide efficient lighting in common areas, (e.g. street lighting, public spaces), such as through utilising solar power, fluorescent or LED fittings.</p>	Evidence in masterplan or electrical plans with <i>statement of compliance</i> from engineer.
<p><b>3.4.2</b> Utilise efficient lighting for carparks and employ strategies to reduce energy usage. This may include but is not limited to the use of:</p> <ul style="list-style-type: none"> <li>• reflective diffusers;</li> <li>• timers; and/or</li> <li>• motion sensors.</li> </ul>	Evidence in masterplan or electrical plans with <i>statement of compliance</i> from electrical engineer or developer.
<h3>3.5 HVAC</h3> <p><b>INTENT:</b> To increase the energy efficiency of HVAC systems throughout the project.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.5.1</b> Demonstrate how the design has considered and incorporated natural breezes, cross ventilation, thermal mass and other design elements relevant to the climate zone into the project to reduce the need for artificial heating and cooling.</p>	Evidence in plans with statement from architect.
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>3.5.2</b> The HVAC system in each separate enclosed space within the nominated area is designed to be automatically shut down when not in use.</p>	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<p><b>3.5.3</b> The HVAC system is designed to allow a wider temperature control band when not in use (minimum of an additional two degrees in each direction is required).</p>	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<p><b>3.5.4</b> Install carbon dioxide monitoring devices to single HVAC systems which have a capacity over 20kW.</p>	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<h3>3.6 CARPARKS</h3> <p><b>INTENT:</b> To reduce the energy usage associated with ventilating carparks within buildings.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>3.6.1</b> Install carbon monoxide monitoring/controls to carpark exhaust systems.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer.
<p><b>3.6.2</b> 25% of the total enclosed/semi-enclosed carpark by area is naturally ventilated, or 50% of the total enclosed/semi-enclosed carpark has either passive supply or passive exhaust.</p>	Statement from engineer and evidence in plans.

Criteria	Required Supporting Documentation
<b>3.7 LIFT SYSTEMS</b> <b>INTENT:</b> To reduce the energy usage of lift systems within buildings. <b>REQUIREMENT:</b> Achieve the following:	
<b>3.7.1</b> Where lifts are installed in the project, demonstrate consideration of lift power systems that are energy efficient and environmentally friendly. This includes but is not limited to: <ul style="list-style-type: none"> <li>• use of regenerative drives;</li> <li>• machine room-less elevators;</li> <li>• dispatch control systems;</li> <li>• intelligent automation; and/or</li> <li>• stand-by modes.</li> </ul>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<b>3.8 REDUCTION IN GREENHOUSE GAS EMISSIONS</b> <b>INTENT:</b> To reduce greenhouse gas emissions within the project. <b>RESIDENTIAL AREAS</b> <b>REQUIREMENT:</b> Achieve at least TWO credits from the following options, or meet 3.8.7:	
<b>3.8.1 Alternative Energy Sources</b> Provision of solar power (or other non-polluting, renewable power source) to service at least 70% of the common area energy requirements.	Statement from engineer showing capacity and supporting guidance within design guidelines regarding optimal positioning for performance.
<b>3.8.2 Water Heating</b> Mandated use of: <ul style="list-style-type: none"> <li>• gas hot water;</li> <li>• heat pump; or</li> <li>• solar hot water (gas or electric boosted).</li> </ul>	<i>Statement of compliance</i> from developer.
<b>3.8.3 Appliances</b> Use of appliances which produce less greenhouse gas emissions. This should include at a minimum: <ul style="list-style-type: none"> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum; and</li> <li>• air conditioning systems with a <i>COP</i> of <math>\geq 3.20</math> and <i>EER</i> of <math>\geq 3.00</math>.</li> </ul>	Appliance palette including product manufacturer, number and energy star rating and/or <i>COP</i> and <i>EER</i> .
<b>3.8.4 NatHERS Rating</b> Units within the project achieve a star rating of at least 6 star NatHERS rating on average.	<i>Design guidelines</i> and supporting evidence of energy efficiency using BERS, Accurate, FirstRate5 or NABERS or similar with ABSA (Association of Building Sustainability Assessors) certificate using second generation software systems' thermal calculation method.
<b>3.8.5 Lighting</b> A minimum of 300 lux is achieved on the surface (nominally 900mm above floor level) using energy efficient lighting in the following: <ul style="list-style-type: none"> <li>• kitchen sink;</li> <li>• cooktop or stove; and</li> <li>• vanity basins in bathrooms and ensuites.</li> </ul>	Statement from electrical engineer/designer.
<b>3.8.6 Demand/Behavioural Management</b> This may include: <ul style="list-style-type: none"> <li>• technology including sensors, timers etc.;</li> <li>• education using community-based social marketing and use of normative messaging, end user manual, community workshop; and/or</li> <li>• use of load monitoring devices to provide feedback (e.g. energy monitors).</li> </ul>	Evidence in design guidelines or electrical plans with <i>statement of compliance</i> from engineer or developer. Evidence of end user manual and proposed structure of end user education program.





Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<b>3.8.7 Reduction through Other Means</b> Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.	Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements (i.e. calculations on the energy balance).
<b>COMMERCIAL AND RETAIL AREAS</b>	
<b>REQUIREMENT:</b> Achieve the following:	
<b>3.8.8</b> Reduce greenhouse gas emissions within commercial and/or retail areas (where applicable) by at least 20% more than required under relevant Federal and State government regulatory means.  This could be achieved through: <ul style="list-style-type: none"> <li>• alternative energy sources (e.g. solar power or other non-polluting, renewable power source);</li> <li>• energy efficient appliances and fixtures;</li> <li>• reduction through design; and/or</li> <li>• demand/behavioural management.</li> </ul>	Worked calculations showing how initiatives will achieve at least 20% reduced greenhouse gas emissions compared to regulatory compliance.
<b>3.9 COMMUNITY FACILITIES</b>	
<b>INTENT:</b> To reduce energy usage in <i>community facilities</i> .	
<b>REQUIREMENT:</b> Where the project includes <i>community facilities</i> , achieve EACH of the following:	
<b>3.9.1</b> Where swimming pools are installed in the project, demonstrate consideration of pump systems that are energy efficient and environmentally friendly. This includes but is not limited to: <ul style="list-style-type: none"> <li>• variable speed control;</li> <li>• variable-frequency drives; or</li> <li>• variable-speed pumps.</li> </ul>	Statement from developer.
<b>3.9.2</b> In <i>community facilities</i> utilise (where relevant): <ul style="list-style-type: none"> <li>• energy efficient lighting (e.g. LED or Compact Fluorescent Lamp); and</li> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum;</li> </ul> OR <ul style="list-style-type: none"> <li>• provision of solar power (or other non-polluting, renewable power source).</li> </ul>	Statement from developer.  Appliance palette including product manufacturer, number and energy star rating.  Statement from engineer and relevant plans.

# Mixed Use – Materials

To achieve certification in the Materials element, a *project* must achieve:

- **three** requirements from the 'Civil Works' (4.1.1-4.1.4) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1);
- **three** requirements from the 'Built Form' (4.1.5–4.1.8) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1); and
- **two** credits from 4.2.1-4.2.5 under Emissions (4.2).

## Criteria

## Required Supporting Documentation

### 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

#### CIVIL WORKS

##### 4.1.1 Roads

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base.

Statement from supplier and supporting technical information.

##### 4.1.2 Services

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

Statement from quantity surveyor and/or supplier and supporting technical information.

##### 4.1.3 Hard Landscaping

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.

Statement from supplier and supporting technical information.

##### 4.1.4 Soft Landscaping

Throughout the project:

- any vegetative debris from the site is mulched and reused; and
- any non-contaminated topsoil is stockpiled and reused within the site.

Statement from landscape architect, including details of quantities, uses and attributes.



Criteria	Required Supporting Documentation
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate;  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated.</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials;</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and/or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	Statement from quantity surveyor and/or supplier and supporting technical information.
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	Statement from supplier and supporting technical information.

Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>• ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>• ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (residential: kgCO<sub>2</sub>e/occupant/year or retail/commercial: kgCO<sub>2</sub>e/gross building area/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.	
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.
<b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are E0 rated.	Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.



## Mixed Use – Water

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

- in residential areas – **two** credits from 5.1.1-5.1.3 or meet 5.1.4 under Reduction in Potable Water Demand (5.1);
- in non-residential areas – 5.1.5 under Reduction in Potable Water Demand (5.1);
- 5.2.1 under Submetering (5.2); and
- **all** of the requirements under Irrigation Requirements (5.3); and
- if the project includes any *community facilities*, **all** of the requirements under Community Facilities (5.4).

### Criteria

### Required Supporting Documentation

## 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce *potable water* consumption within dwellings and tenancies.

### RESIDENTIAL AREAS

**REQUIREMENT:** Achieve at least TWO credits from the following options, or meet 5.1.4:

**5.1.1** Project is connected to a non-potable water supply which is plumbed to dwellings for toilet use at a minimum.

Statement from engineer and relevant plans.

**5.1.2** At a minimum fixtures must include:

- showerheads that use ≤6 litres per minute; and
- taps to bathrooms, kitchen and laundry that use ≤6 litres per minute.

Finishes palette including product manufacturer, number and WELS rating.

**5.1.3** Water efficient appliances installed within dwellings which include, where installed, a dishwasher with a maximum water consumption of ≤14 litres per use.

Appliance palette including product manufacturer, number and WELS rating.

### ALTERNATIVE COMPLIANCE

**5.1.4** Reduce *potable water* usage within residential areas of the project (excluding common area irrigation requirements captured in 5.3.1) by at least 20% more than required under relevant Federal and State government regulatory means.

Worked calculations showing how initiatives will achieve at least 20% reduced potable water usage compared to regulatory compliance.

### NON-RESIDENTIAL AREAS

**REQUIREMENT:** Achieve the following:

**5.1.5** Reduce *potable water* usage within non-residential areas of the project (excluding common area irrigation requirements captured in 5.3.1) by at least 20% more than required under relevant Federal and State government regulatory means.

This may be achieved by any or a combination of the following means:

- stormwater harvesting;
- plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);
- greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);
- rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or
- water use efficiency (e.g. fittings with a higher WELS rating than mandated through regulation, rainwater tanks with larger capacity than mandated).

Certification by engineer or local government engineer or development assessment officer or other *appropriately qualified professional* (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient stormwater will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)

Worked calculations showing how initiatives will achieve at least 20% reduced potable water usage compared to regulatory requirements.

## 5.2 SUBMETERING

**INTENT:** To ensure each occupant has the opportunity to monitor and manage water usage.

**REQUIREMENT:** Achieve the following:

**5.2.1** Each individual residential unit and commercial tenancy is sub-metered.

Evidence in plans with *statement of compliance* from engineer or developer.



Criteria	Required Supporting Documentation
<h3>5.3 IRRIGATION REQUIREMENTS</h3> <p><b>INTENT:</b> To reduce the use of <i>potable water</i> for irrigation purposes in the public realm.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>5.3.1</b> Use drought tolerant species which have no irrigation requirements for the public realm.</p> <p>Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through:</p> <ul style="list-style-type: none"> <li>stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);</li> <li>plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);</li> <li>greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);</li> <li>rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or</li> <li>use of underground water sources.</li> </ul> <p><b>Note:</b> the following exemptions may apply:</p> <ul style="list-style-type: none"> <li><i>potable water</i> used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover); and</li> <li><i>potable water</i> used to irrigate non-commercial food production gardens.</li> </ul>	<p>Landscape palette and statement from landscape architect.</p> <p>Certification by engineer or local government engineer or development assessment officer or other <i>appropriately qualified professional</i> (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)</p> <p>If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.</p>
<p><b>5.3.2</b> Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage. Mulch must be applied to planted areas and maintained.</p>	<p>Irrigation plan or statement from landscape architect regarding irrigation methods.</p>
<p><b>5.3.3</b> Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.</p>	<p>Statement from registered landscape architect.</p>
<p><b>5.3.4</b> Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.</p>	<p>Statement from registered landscape architect.</p>
<h3>5.4 COMMUNITY FACILITIES</h3> <p><b>INTENT:</b> To reduce <i>potable water</i> usage in <i>community facilities</i>.</p> <p><b>REQUIREMENT:</b> Where the project includes <i>community facilities</i>, achieve EACH of the following:</p>	
<p><b>5.4.1</b> Where an outdoor swimming pool is included within the project, a pool blanket is included.</p>	<p>Statement from developer.</p>
<p><b>5.4.2</b> Where a swimming pool is included within the project, ensure there is a backwash minimisation system in place (e.g. cartridge filter, filter utilising cyclone technology, oversized sand filter, centrifugal/pre-filter device, backwash recycling system or similar).</p>	<p>Statement from developer.</p>
<p><b>5.4.3</b> In <i>community facilities</i> utilise (where relevant):</p> <ul style="list-style-type: none"> <li>waterless urinals;</li> <li>taps with water usage of ≤6 litres per minute; and</li> <li>dishwashers with a water consumption of ≤14 litres per use.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>connect to a non-potable water source for indoor non-drinking water uses.</li> </ul>	<p>Statement from engineer and relevant plans.</p>



## Mixed Use – 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 **five** of the following sections:
  - Ongoing Community Engagement, Governance and Activation (6.2)
  - Efficient and Accessible Transport (6.3)
  - Engaging and Inclusive Public Realm (6.4)
  - Community Prosperity (6.5)
  - Connected Communities (6.6)
  - Safe and Accessible Living (6.7)
  - Healthy and Active Communities (6.8)

### Criteria

### Required Supporting Documentation

## 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability and liveability goals including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Consultation/stakeholder engagement strategy.

**6.1.3** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

**6.1.4** Consider and appropriately conserve and/or recognise and respect indigenous and post-European cultural heritage. Cultural heritage investigations should be conducted in accordance with the minimum standards outlined in the Burra Charter (1999) using the services of appropriately qualified professionals.

Evidence of recognition and protection or considerate reuse of cultural heritage sites or structures (and artefacts) if applicable and in keeping with advice from traditional owners, long-term locals or historical advisors.

This could include:

- evidence of voluntary liaison with traditional owner, if such a group can be identified, and the consideration of Indigenous cultural values in the processes, design and construction of the project; and
- evidence of consideration of significant post European cultural heritage, such as retaining significant trees, fences, old machinery and structures of significance, interpretive signage, research of site history and publication, promotion and incorporation in the design and naming of elements.

**6.1.5** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between residents/employees/visitors and other local people using the area, according to Crime Prevention Through Environmental Design (CPTED).

Evidence in plans, and statement from planner.

## 6.2 ONGOING COMMUNITY ENGAGEMENT, GOVERNANCE AND ACTIVATION

**INTENT:** To ensure the project adequately plans and delivers a structure and framework which supports ongoing community cohesion and resilience as a socially sustainable community.

**REQUIREMENT:** Achieve the following:

**6.2.1** Establish a structure or framework for ongoing community involvement and establish ongoing partnerships with the broader community. The framework should include some of the activities listed in 6.2.2-6.2.7 and commence within one year of the occupation of the first dwelling and continue through until the last stage. The framework should also include a plan to encourage the establishment of a self-sufficient community group by project completion.

Evidence of structure and framework including a list of measurables and delivery timeframes.

Criteria	Required Supporting Documentation
<b>REQUIREMENT:</b> Achieve at least FOUR credits from the following options, or identify other actions appropriate to the local context:	
<b>6.2.2</b> Facilitate community grants programs.	Details of programs including financial investment and timeframes.
<b>6.2.3</b> Sponsor, facilitate and/or provide local community groups/events. May be within the project or supporting the surrounding community.	Details including schedule, purpose and nature of the sponsorship.
<b>6.2.4</b> Involve local trainees in construction activities.	Details including arrangements and planned activities and timeframes.
<b>6.2.5</b> Engage with local environmental groups/catchment organisations for ongoing community-based environmental restoration and maintenance activities.	Details including arrangements and planned activities and timeframes.
<b>6.2.6</b> Provide or support an existing resource (e.g. <i>community development officer</i> or program) to facilitate and support community development.	Details including responsibilities, level of commitment and hours of commitment.
<b>6.2.7</b> Demonstrate the strategies and actions which are creating and facilitating a connected community.	Details including timeframes and structure.
<b>6.3 EFFICIENT AND ACCESSIBLE TRANSPORT</b>	
<b>INTENT:</b> To reduce reliance on private cars as the primary mode of transport.	
<b>REQUIREMENT:</b> Achieve the following:	
<b>6.3.1</b> Demonstrate encouragement of active transport options amongst the community.	Details of programs including timeframes.
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.3.2 Bicycle Parking</b> Provide one secure bicycle rack per dwelling and provide bicycle parking at all community facilities and retail/commercial businesses within the project at a rate of one space per 500sqm of GFA. Place bicycle parking in public view and easily accessible from the road.	Evidence in plans, and statement from masterplanner and developer stating how the requirements have been met.
<b>6.3.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathway spaces (including streets and open spaces). Also connect with paths in neighbouring areas, properties and facilities. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.	Evidence in plans, and statement from landscape architect and developer stating how the requirements have been met.
<b>6.3.4 Active Transport Linkages</b> Provide shared pathways for both walking and cycling. The width of the pathway should be a minimum of 3m and designed appropriately for the anticipated level of pedestrian and bicycle use, and the likely speed of cyclists and the required clearances. OR Provide pathways on both sides of all roads within the project.	Evidence in plans and/or statement on how the requirements have been met.



Criteria	Required Supporting Documentation
<p><b>6.3.5 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within:</p> <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> <p>The stop/station must be serviced by at least ten services per weekday (by the time the buildings within the project are 50% occupied) to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.</p> <p><b>6.3.6 Community Transport</b> Provide a community transport network such as car share, car pool or community minibus to facilities.</p> <p><b>6.3.7 Low-Emitting and Fuel-Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles within the project for 5% of the total vehicle parking capacity of each site.</p>	<p>Evidence of existing transport location/s and frequency of service. If public transport stop is proposed, details of proposal to local government and negotiations to date should be provided.</p> <p>Evidence including arrangements and frequency.</p> <p>Evidence including distribution and eligibility.</p> <p>Evidence including the location, arrangements and provider of scheme.</p> <p>Evidence including the location and number of parks.</p>
<h2>6.4 ENGAGING AND INCLUSIVE PUBLIC REALM</h2> <p><b>INTENT:</b> To ensure the delivery of high quality public realm which provides an attractive, inclusive, non-discriminatory and safe environment for the community to meet, engage and recreate.</p> <p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>6.4.1</b> Demonstrate a hierarchy of functions within the public realm.</p> <p><b>6.4.2</b> The public realm is designed to allow multiple uses for community members, including children, the elderly and disabled people with regard taken to safety, comfort and security. Provide appropriate seating, shading, accessible toilets and water bubblers.</p> <p><b>6.4.3</b> The design of the public realm takes account of the role it plays in terms of inclusiveness and connectivity within and external to the project.</p> <p><b>6.4.4</b> The design plans indicate how space for quality social interaction has been considered in the design of streets and open areas and choice of material throughout the project and its surroundings.</p> <p><b>6.4.5</b> Benches and other seating areas are located in places with consideration of the sun, shade, wind and rain.</p> <p><b>6.4.6</b> Create locally distinct places which connect people through place and strongly reflect the local identity of the area through the design of social spaces.</p> <p><b>6.4.7</b> Demonstrate the flexibility of the public realm for multiple other uses (e.g. water sensitive urban design, conservation, business enterprises, healthy active living, etc).</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p> <p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>

Criteria	Required Supporting Documentation
<p><b>6.4.8</b> Provide an attractive, safe and walkable street environment by planting or retaining street trees at 12-25 metre intervals, or demonstrate intervals appropriate to the chosen tree species and region to ensure maximum shade for pedestrians.</p>	Evidence in landscape plans and statement from registered landscape architect.
<p><b>REQUIREMENT:</b> For the residential components of the project, achieve EACH of the following:</p>	
<p><b>6.4.9</b> A common area is provided within the project which is designed to encourage interaction amongst residents. The common area should include at least three of the following:</p> <ul style="list-style-type: none"> <li>• composting facilities;</li> <li>• communal or individual garden plots;</li> <li>• worm farm facilities;</li> <li>• in-ground deep soil planting;</li> <li>• playground area;</li> <li>• sun-shaded area with seating;</li> <li>• outdoor gym;</li> <li>• outdoor dining; and/or</li> <li>• barbecue facilities.</li> </ul>	Evidence in plans and statement from landscape architect and/or architect.
<p><b>6.4.10</b> Provide private external space to at least 90% of dwellings. The space must be equivalent in size to at least 15% of the area of each dwelling, or at least 2 x 3m (whichever is the greater). It must be directly adjacent and accessible from the dwelling(s).</p>	Statement from architect and evidence in plans.
<h2>6.5 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.5.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>• economic goals and priorities for the community;</li> <li>• employment targets and the job balance ratio;</li> <li>• activities to be provided within the project (e.g. retail, industrial, commercial or community based);</li> <li>• socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>• how the project will contribute to the host local government area's socio-economic profile; and</li> <li>• net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	Statement of compliance from developer and evidence of community economic/employment strategy and implementation plan.





Criteria	Required Supporting Documentation
<b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:	
<b>6.5.2</b> Provide significant diversity of housing types including a mix of dwelling sizes (e.g. number of bedrooms) and/or densities of housing.	Evidence in plans and statement from developer including dwelling mix and densities.
<b>6.5.3</b> Provide at least 10% of dwellings as <i>affordable</i> . <i>Affordable</i> dwelling must be interspersed with other dwellings, not in a group together or isolated from other housing.	Market analysis and unit, house, land and/or house and land package prices.
<b>6.6 CONNECTED COMMUNITIES</b>	
<b>INTENT:</b> To provide integrated communities to meet local needs and reduce the number of private car trips required.	
<b>REQUIREMENT:</b> Locate near (such that 75% of residences/workplaces are within 1km by foot) or provide within two years of the first residential occupancy at least FIVE of the following local services.	
<b>Note:</b> Local facilities should be co-located near public transport stops and pathways.	
<b>6.6.1</b> Newsagent	Evidence in plans, including walking distances.
<b>6.6.2</b> Grocery/corner store	
<b>6.6.3</b> Primary school	
<b>6.6.4</b> Secondary school	
<b>6.6.5</b> University	
<b>6.6.6</b> Kindergarten, preschool, or childcare	
<b>6.6.7</b> Medical practice	
<b>6.6.8</b> Chemist	
<b>6.6.9</b> Specialty stores	
<b>6.6.10</b> Cafes and/or restaurants	
<b>6.6.11</b> Community centre	
<b>6.6.12</b> Dog park	
<b>6.6.13</b> Public transport hub	
<b>6.6.14</b> Bank or cash machine	
<b>6.6.15</b> Post office	
<b>6.6.16</b> Emergency services (including rural fire brigade, ambulance, police)	
<b>6.6.17</b> Communication centre or business centre	
<b>6.6.18</b> Community accessible facilities/spaces (e.g. rooms, public areas, education centres)	
<b>6.6.19</b> Public toilets	
<b>6.6.20</b> Farmer's markets	
<b>6.6.21</b> Community garden	

Criteria	Required Supporting Documentation
<b>6.7 SAFE AND ACCESSIBLE LIVING</b> <b>INTENT:</b> To provide facilities and housing which are appropriate and accessible for a variety of people. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.7.1</b> Achieve in at least 50% of dwellings 'Silver' performance levels under the Livable Housing Australia's 'Livable Housing Design Guidelines'.	Evidence in plans, and statement from architect or building designer and developer.
<b>6.7.2</b> All common areas are universally accessible.	Evidence in plans, and statement from architect.
<b>6.8 HEALTHY AND ACTIVE COMMUNITIES</b> <b>INTENT:</b> To design and delivery communities which promote community-based physical activity and support healthy lifestyle behaviours. <b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.8.1</b> Ensure all dwellings have access to neighbourhood parks within 400m (or a five minute walk) for a pocket park and up to 800m (or a ten minute walk) for playing fields.	Evidence in plans and statement from planner.
<b>6.8.2</b> Provide active travel links that are attractive, safe, direct and convenient to ensure permeability, creating better accessibility towards a destination.	Evidence in plans and statement from planner.
<b>6.8.3</b> Ensure the location and management of parking does not undermine the comfort and safety of pedestrians.	Evidence in plans and statement from planner.
<b>6.8.4</b> Provide support facilities to encourage interaction and useability including seating, water fountains, shelter, public toilets and signage.	Evidence in plans and statement from planner.

# Industrial

The background image shows an industrial park with solar panels mounted on white poles. In the foreground, there is a landscaped area with a concrete path, a bed of grey rocks, and clumps of green grass. The sky is clear blue, and there are trees in the background. The image is overlaid with a semi-transparent blue geometric pattern consisting of overlapping triangles.

**Project:** Coolum Eco Industrial Park

**Developer:** Economic Development Queensland

**Certification:** 6 elements (ecosystems, waste, energy, materials, water, community)

Certified 2010

# Industrial – 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 1.4.3-1.4.11 under Urban Ecology (1.4).

## Criteria

## Required Supporting Documentation

### 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides and herbicides.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

### 1.2 SOIL HEALTH

**INTENT:** To ensure construction practices retain the ecological integrity of the soil to assist in achieving better environmental outcomes in the public realm.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Take soil samples in areas that are to be retained for vegetative growth to ensure an understanding of soil characteristics. For soils used for revegetation purposes, the organic content of the soil, pH and nutrient status shall be similar to that of undisturbed native soils of ecosystems that support the appropriate plant species intended for the site.

Soil or landscape management plan, including test results.



Criteria	Required Supporting Documentation
<p><b>1.2.2</b> Unless soil is heavily contaminated, retain insitu or stockpile and reuse all topsoil to best advantage on site. Where topsoil is minimal or absent and subsoil is deemed suitable for amendment, stockpile subsoil on site.</p> <p><b>Note:</b> Wherever possible, stockpiles should be no more than 1.5m high with maximum 1:2 batter and once stockpiling completed, covered with a green cover crop to avoid erosion, desiccation and solarisation.</p>	Evidence in plans of topsoil stockpile location and management requirements.
<p><b>1.2.3</b> Minimise access to site by vehicles to nominated roadways or parking areas, well away from existing trees or intended public realm areas, to minimise compaction. Rip compacted soil once building works are completed. Ensure building wastes, particularly liquid wastes do not contaminate the soil.</p>	Construction management plan, identifying access locations.
<p><b>1.2.4</b> Recycle and reuse all vegetative debris on site (e.g. for topsoil augmentation or composting purposes). If onsite reuse is not feasible, arrangements should be made for green waste to be transported for reuse or disposed of at a fully licensed recycler or reprocessor. There should be no pit burning of green waste on site or disposal to landfill.</p>	Statement from developer and registered landscape architect.
<p><b>1.2.5</b> Amend, mulch and revegetate soils disturbed during construction as well as soils on the remainder of the site where the site has formerly been used for farming, forestry, industrial, commercial or urban land uses. Demonstrate that soils are suitable for intended purposes.</p>	Soil or landscape management plan.
<h3>1.3 EARTHWORKS</h3> <p><b>INTENT:</b> To reduce the disturbance of construction works on the site's natural topography and nearby waterways.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> Conduct thorough site analysis prior to planning and design to identify:</p> <ul style="list-style-type: none"> <li>• areas of prime ecological significance;</li> <li>• areas where clearing and/or major earthworks should specifically not occur;</li> <li>• potential soil issues (e.g. dispersive soils); and</li> <li>• the suitability of the site for earthworks and construction.</li> </ul> <p>The project must adequately consider and preserve significant areas based on the advice of this report.</p>	Site analysis outlining areas which require protection.
<p><b>1.3.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.</p> <p><b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p>	Statement from engineer.
<p><b>1.3.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant Federal, State and Local legislative and regulatory requirements.</p>	Erosion and sediment control plan/soil and water management plan, staging plan and <i>statement of compliance</i> from an <i>appropriately qualified professional</i> .
<p><b>1.3.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p>	Statement from engineer.



Criteria	Required Supporting Documentation
<p><b>1.3.5</b> Design and construct street layout to fit with topography with minimal disruption.</p> <p><b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.</p> <p><b>1.3.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	<p>Pre and post civil contour maps.</p> <p>Contamination report and details on remediation actions.</p>
<h2>1.4 URBAN ECOLOGY</h2> <p><b>INTENT:</b> 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.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.4.1</b> 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.</p> <p><b>1.4.2</b> Reduce urban heat island effect. This could be through:</p> <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction (e.g. open-grid pavement);</li> <li>• incorporation of breezeways and greenways;</li> <li>• provision of shading to roads, footpaths and bicycle paths;</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	<p>Statement from registered landscape architect/horticulturalist.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and plans.</p>
<p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>1.4.3</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.</p> <p><b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.</p> <p><b>3 credits</b> – <i>brownfield site</i>.</p> <p><b>1.4.4</b> The project is a refurbishment (<b>2 credits</b>).</p> <p><b>1.4.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i>, or for landscaping private areas prior to sale are <i>locally native</i>. 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.</p> <p><b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.</p>	<p>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.</p> <p>Details of existing use and pre and post refurbishment building envelope.</p> <p>Landscape palette and statement from registered landscape architect.</p>



Criteria	Required Supporting Documentation
<p><b>1.4.6</b> Include green roofs or green walls, incorporating native plants species, into the project. Species selection should be informed by an <i>appropriately qualified professional</i> and should be designed to improve ecological function. A maintenance plan and non-potable irrigation supply should also be in place.</p> <p><b>1.4.7</b> Incorporate community and productive gardens in the project including space for garden plots, communal or individual vegetable gardens.</p> <p><b>1.4.8</b> Demonstrate that the planting palette for the project contains a mix of fast and slow growing species.</p> <p><b>1.4.9</b> Minimise noise pollution during and post construction.</p> <p><b>1.4.10</b> A minimum of 10% (or greater than regulatory standard) of the site is allocated for <i>deep planting</i>.</p> <p><b>1.4.11</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	<p>Details on size, location and featured species. Statement from registered landscape architect and/or ecologist regarding how the green wall/roof will improve ecological function.</p> <p>Details on the location, maintenance and management of the community/productive gardens.</p> <p>Statement from registered landscape architect.</p> <p>Construction management plan.</p> <p>Statement from registered landscape architect.</p> <p>When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.</p>

# Industrial – Waste

To achieve certification in the Waste element, a *project* must achieve:

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- 2.3.1 under Post-Construction Phase (2.3).

## Criteria

## Required Supporting Documentation

### 2.1 ESSENTIAL ACTION

**INTENT:** To identify the most suitable opportunities for recycling of resources available to the site.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. *Statement of compliance* from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

### 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the works. At a minimum, the waste management plan should include the following:

- waste generation;
- waste systems;
- minimisation strategy;
- performance/reduction targets;
- bin quantity and size;
- collection frequency;
- waste contractors;
- waste management facilities shown on plans;
- signage; and
- monitoring and reporting including frequency and method.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- (i) Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- (ii) If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.



Criteria	Required Supporting Documentation
<p><b>2.2.3</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p>	<p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for end users to reduce waste going to landfill.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>2.3.1</b> Where waste infrastructure is required to be installed in public spaces, include separate waste receptacles for general and recyclable waste.</p>	<p>Evidence in plans and <i>statement of compliance</i> from developer and local authority.</p>

# Industrial – Energy

To achieve certification in the Energy element, a *project* must achieve:

- **all** of the requirements under Climate Responsive Design (3.1);
- 3.2.1 under Submetering (3.2);
- 3.3.1 under Common Area Lighting (3.3); and
- 3.4.1 under Reduction in Greenhouse Gas Emissions (3.4).

## Criteria

## Required Supporting Documentation

### 3.1 CLIMATE RESPONSIVE DESIGN

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

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** The project must be masterplanned and controlled through the development process to demonstrate that positive passive design outcomes are maximised.

Provide evidence that lot layouts and building orientations, including the positioning of fenestration/access points, habitable/non-habitable zones and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), boundary clearances and/or adjacent property information. Also provide evidence that good design intentions are assured through project process by the provision of a system of education, advice, control and monitoring, including through the use of building envelope plans administered through *design guidelines*.

**3.1.2** The project is designed to minimise extremities in temperatures, including negative microclimatic factors.

Statement from planner and engineer with reference to specific examples.

**3.1.3** The design of *public spaces* and hard stand areas optimises microclimatic conditions at all times of the year.

Statement from planner and engineer with reference to specific examples.

### 3.2 SUBMETERING

**INTENT:** To ensure each tenant has the opportunity to monitor and manage energy usage.

**REQUIREMENT:** Achieve the following:

**3.2.1** Each individual tenancy is sub-metered.

Evidence in electrical plans with *statement of compliance* from engineer or developer.

### 3.3 COMMON AREA LIGHTING

**INTENT:** To ensure common areas are lit using energy efficient lighting.

Achieve the following requirement:

**3.3.1** Provide efficient lighting in common areas, (e.g. street lighting, public spaces), such as through utilising solar power, fluorescent or LED fittings.

Evidence in masterplan or electrical plans with *statement of compliance* from engineer or developer.

### 3.4 REDUCTION IN GREENHOUSE GAS EMISSIONS

**INTENT:** To reduce greenhouse gas emissions within the project.

**REQUIREMENT:** Achieve the following:

**3.4.1** Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.

Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements. Evidence in design codes or guidelines.

This could be achieved through:

- alternative energy sources (e.g. solar power or other non-polluting, renewable power source);
- energy efficient appliances and fixtures;
- reduction through design; and/or
- demand/behavioural management.





## Industrial – Materials

To achieve certification in the Materials element, a *project* must achieve:

- **three** requirements from the ‘Civil Works’ (4.1.1–4.1.4) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1);
- the requirements under ‘Structure’, ‘Envelope/Linings’ and **one** other under ‘Built Form’ (4.1.5–4.1.8) or 4.1.9 in any building directly contracted by the developer within the project under Environmentally Responsible Materials (4.1); and
- **two** credits from 4.2.1–4.2.5 under Emissions (4.2).

### Criteria

### Required Supporting Documentation

## 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

### CIVIL WORKS

#### 4.1.1 Roads

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base.

Statement from supplier and supporting technical information.

#### 4.1.2 Services

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

Statement from quantity surveyor and/or supplier and supporting technical information.

#### 4.1.3 Hard Landscaping

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.

Statement from supplier and supporting technical information.

#### 4.1.4 Soft Landscaping

Throughout the project:

- any vegetative debris from the site is mulched and reused; and
- any non-contaminated topsoil is stockpiled and reused within the site.

Statement from landscape architect, including details of quantities, uses and attributes.

Criteria	Required Supporting Documentation
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate;  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated.</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials; and/or</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and/or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	Statement from quantity surveyor and/or supplier and supporting technical information.
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	Statement from supplier and supporting technical information.



Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>• ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>• ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (kgCO<sub>2</sub>e/gross building area/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<p><b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.</p> <p>i) Meet the requirements in any buildings which are directly contracted by the developer within the project.</p> <p>ii) Provide explicit wording and guidance in <i>design guidelines</i> regarding the use of low emission paints, sealants and adhesives and the related health benefits.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are E0 rated.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>

# Industrial – Water

To achieve certification in the Water element, a *project* must achieve:

- **two** credits from 5.1.1-5.1.4 or meet 5.1.5 under Reduction in Potable Water Demand (5.1);
- 5.2.1 under Submetering (5.2); and
- **all** of the requirements under Irrigation Requirements (5.3).

## Criteria

## Required Supporting Documentation

### 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce *potable water* consumption within tenancies.

**REQUIREMENT:** Achieve at least **TWO** credits from the following options, or meet 5.1.5:

**5.1.1** Project is connected to a recycled water supply which is plumbed to buildings for outdoor use and toilet flushing at a minimum.

Statement from engineer and relevant plans.

**5.1.2** Project mandates through *design guidelines*, covenants or encumbrances rainwater tanks which are plumbed to buildings for outdoor use and toilet flushing at a minimum.

*Design guidelines* and details of building design review processes.

**5.1.3** Project includes a central storage facility which captures either stormwater or rainwater for reuse within buildings. At a minimum, recycled rainwater or stormwater should be plumbed to dwellings for outdoor and toilet flushing.

Statement from engineer and relevant plans.

**5.1.4** Project mandates through *design guidelines* or similar water efficient fixtures. At a minimum mandated fixtures must include:

*Design guidelines* and details of building design review processes.

- showerheads that use ≤6 litres per minute; and
- taps to bathrooms, kitchen and laundry that use ≤6 litres per minute.

#### ALTERNATIVE COMPLIANCE

**5.1.5** Reduce *potable water* usage within the project (excluding common area irrigation requirements captured in 5.3.1) by at least 20% more than required under relevant Federal and State government regulatory means.

*Design guidelines* and worked calculations showing how initiatives will achieve at least 20% reduced potable water usage compared to regulatory compliance.

### 5.2 SUBMETERING

**INTENT:** To ensure each tenant has the opportunity to monitor and manage water usage.

**REQUIREMENT:** Achieve the following:

**5.2.1** Each individual tenancy is sub-metered.

Evidence in plans with *statement of compliance* from engineer or developer.



Criteria	Required Supporting Documentation
<h3>5.3 IRRIGATION REQUIREMENTS</h3> <p><b>INTENT:</b> To reduce the use of <i>potable water</i> for irrigation purposes in the public realm.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>5.3.1</b> Use drought tolerant species which have no irrigation requirements for the public realm.</p> <p>Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through:</p> <ul style="list-style-type: none"> <li>• stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);</li> <li>• plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);</li> <li>• greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);</li> <li>• rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or</li> <li>• use of underground water sources.</li> </ul> <p><b>Note:</b> the following exemptions may apply:</p> <ul style="list-style-type: none"> <li>• <i>potable water</i> used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover); and</li> <li>• <i>potable water</i> used to irrigate non-commercial food production gardens.</li> </ul>	<p>Landscape palette and statement from landscape architect.</p> <p>Certification by engineer or local government engineer or development assessment officer or other <i>appropriately qualified professional</i> (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)</p> <p>If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.</p>
<p><b>5.3.2</b> Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage. Mulch must be applied to planted areas and maintained.</p>	<p>Irrigation plan or statement from landscape architect regarding irrigation methods.</p>
<p><b>5.3.3</b> Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.</p>	<p>Statement from registered landscape architect.</p>
<p><b>5.3.4</b> Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.</p>	<p>Statement from registered landscape architect.</p>



# 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)

## Criteria

## Required Supporting Documentation

### 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability and liveability goals including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between visitors/employees and other local people using the area, according to Crime Prevention Through Environmental Design (CPTED).

Evidence in plans, and statement from planner.

### 6.2 COMMUNITY CONSULTATION, PLANNING AND DEVELOPMENT

**INTENT:** To proactively and meaningfully engage in effective and informed consultation with the local community.

**REQUIREMENT:** Achieve EACH of the following:

**6.2.1** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Evidence of measures to raise awareness e.g. photo of billboard and statement about timing and duration that it was visible, evidence of public meeting/s and attendance, evidence of letter drop, evidence of relevant phone calls.

**6.2.2** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

### 6.3 EFFICIENT AND ACCESSIBLE TRANSPORT

**INTENT:** To reduce reliance on private cars as the primary mode of transport.

**REQUIREMENT:** Achieve the following:

**6.3.1** Demonstrate encouragement of active transport options amongst the community.

Details of programs including timeframes.

**REQUIREMENT:** Achieve at least TWO credits from the following options:

#### **6.3.2 Bicycle Parking**

Cyclist facilities (including secure storage and end of trip facilities) are provided for 5% of staff, and one per 1,000m<sup>2</sup> of floor space for visitors.

Evidence in plans, and statement from masterplanner and developer stating how the requirements have been met.



Criteria	Required Supporting Documentation
<p><b>6.3.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathways running wholly in public spaces (including streets and open spaces), directly connecting industrial areas to local facilities and providing links between areas. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.</p> <p><b>6.3.4 Active Transport Linkages</b> Provide shared pathways for both walking and cycling. The width of the pathway should be a minimum of 3m and designed appropriately for the anticipated level of pedestrian and bicycle use, and the likely speed of cyclists and the required clearances. OR Provide pathways on both sides of all roads within the project.</p> <p><b>6.3.5 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within:</p> <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> <p>The stop/station must be serviced by at least ten services per weekday (by the time the building(s) within the project are 50% occupied) to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.</p> <p><b>6.3.6 Shared Transport</b> Provide a shared transport system to cater for transport needs such as for those employees involved in shift work.</p> <p><b>6.3.7 Low-Emitting and Fuel Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles at all <i>community facilities</i> and retail/commercial businesses within the project for 5% of the total vehicle parking capacity of each site.</p>	<p>Evidence in plans, and statement from landscape architect, developer and engineer stating how the requirements have been met.</p> <p>Evidence in plans and/or statement on how the requirements have been met.</p> <p>Evidence of existing transport location(s) and frequency of service. If public transport stop is proposed, details of proposal to local government and negotiations to date should be provided.</p> <p>Evidence including arrangements and frequency.</p> <p>Evidence including distribution and eligibility.</p> <p>Evidence including the location, arrangements and provider of scheme.</p> <p>Evidence including the location and number of parks.</p>

Criteria	Required Supporting Documentation
<h2>6.4 ENGAGING AND INCLUSIVE PUBLIC REALM</h2> <p><b>INTENT:</b> To create projects which provide access and opportunities for community and employee interactions.</p> <p><b>REQUIREMENT:</b> Achieve at least THREE out of the following:</p>	
<p><b>6.4.1</b> Demonstrate a hierarchy of functions within the public realm.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>
<p><b>6.4.2</b> The public realm is designed to allow multiple uses for community members, including children, the elderly and disabled people with regard taken to safety, comfort and security. Provide appropriate seating, shading, accessible toilets and water bubblers.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>
<p><b>6.4.3</b> The design of the public realm takes account of the role it plays in terms of inclusiveness and connectivity within and external to the project.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>
<p><b>6.4.4</b> The design plans indicate how space for quality social interaction has been considered in the design of streets and open areas and choice of material throughout the project and its surroundings.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>
<p><b>6.4.5</b> Benches and other seating areas are located in places with consideration of the sun, shade, wind and rain.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>
<p><b>6.4.6</b> Create locally distinct places which connect people through place and strongly reflect the local identity of the area through the design of social spaces.</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>
<p><b>6.4.7</b> Demonstrate the flexibility of the public realm for multiple other uses (e.g. water sensitive urban design, conservation, business enterprises, healthy active living, etc).</p>	<p><i>Statement of compliance</i> from registered landscape architect, registered urban designer and/or planner with reference to plans.</p>
<p><b>6.4.8</b> Provide an attractive, safe and walkable street environment by planting or retaining street trees at 12-25 metre intervals, or demonstrate intervals appropriate to the chosen tree species and region to ensure maximum shade for pedestrians.</p>	<p>Evidence in landscape plans and statement from registered landscape architect.</p>
<h2>6.5 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.5.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>• economic goals and priorities for the community;</li> <li>• employment targets and the job balance ratio;</li> <li>• activities to be provided within the project (e.g. retail, industrial, commercial or community based);</li> <li>• socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>• how the project will contribute to the host local government area's socio-economic profile; and</li> <li>• net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	<p><i>Statement of compliance</i> from developer and evidence of community economic/employment strategy and implementation plan.</p>



Criteria	Required Supporting Documentation
<h2>6.6 LOCAL FACILITIES</h2> <p><b>INTENT:</b> To provide integrated projects which meet the needs of employees of the site and reduce the number of private car trips required.</p> <p><b>REQUIREMENT:</b> Locate near (such that 75% of workplaces are within 1km by foot) or provide within two years of the first occupancy at least FIVE of the following local services.</p> <p><b>Note:</b> Local facilities should be co-located near public transport stops and pathways.</p>	
<p><b>6.6.1</b> Newsagent</p> <p><b>6.6.2</b> Grocery/corner store</p> <p><b>6.6.3</b> Primary school</p> <p><b>6.6.4</b> Secondary school</p> <p><b>6.6.5</b> University</p> <p><b>6.6.6</b> Kindergarten, preschool, or childcare</p> <p><b>6.6.7</b> Medical practice</p> <p><b>6.6.8</b> Chemist</p> <p><b>6.6.9</b> Specialty stores</p> <p><b>6.6.10</b> Cafes and/or restaurants</p> <p><b>6.6.11</b> Community centre</p> <p><b>6.6.12</b> Dog park</p> <p><b>6.6.13</b> Public transport hub</p> <p><b>6.6.14</b> Bank or cash machine</p> <p><b>6.6.15</b> Post office</p> <p><b>6.6.16</b> Emergency services (including rural fire brigade, ambulance, police)</p> <p><b>6.6.17</b> Communication centre or business centre</p> <p><b>6.6.18</b> Community accessible facilities/spaces (e.g. rooms, public areas, education centres)</p> <p><b>6.6.19</b> Public toilets</p>	<p>Evidence in plans, including walking distances.</p>
<h2>6.7 HEALTHY AND ACTIVE COMMUNITIES</h2> <p><b>INTENT:</b> To design and deliver projects which promote community-based physical activity and support healthy lifestyle behaviours.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>6.7.1</b> Provide active travel links that are attractive, safe, direct and convenient to ensure permeability, creating better accessibility towards a destination.</p> <p><b>6.7.2</b> Ensure the location and management of parking does not undermine the comfort and safety of pedestrians.</p> <p><b>6.7.3</b> Provide support facilities to encourage interaction and useability including seating, water fountains, shelter, public toilets and signage.</p>	<p>Evidence in plans and statement from planner.</p> <p>Evidence in plans and statement from planner.</p> <p>Evidence in plans and statement from planner.</p>

# Retail







## Retail – 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 1.3.3-1.3.12 under Urban Ecology (1.3).

### Criteria

### Required Supporting Documentation

## 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides and herbicides.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

## 1.2 EARTHWORKS

**INTENT:** To reduce the disturbance of construction works on the site's natural topography and nearby waterways.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Conduct thorough site analysis prior to planning and design to identify:

- areas of prime ecological significance;
- areas where clearing and/or major earthworks should specifically not occur;
- potential soil issues (e.g. dispersive soils); and
- the suitability of the site for earthworks and construction.

Site analysis outlining areas which require protection.

The project must adequately consider and preserve significant areas based on the advice of this report.

Criteria	Required Supporting Documentation
<p><b>1.2.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.  <b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p> <p><b>1.2.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant Federal, State and Local legislative and regulatory requirements.</p> <p><b>1.2.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p> <p><b>1.2.5</b> Design and construct street layout to fit with topography with minimal disruption.  <b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.</p> <p><b>1.2.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	<p>Statement from engineer.</p> <p>Erosion and sediment control plan/soil and water management plan, staging plan and <i>statement of compliance</i> from an <i>appropriately qualified professional</i>.</p> <p>Statement from engineer.</p> <p>Pre and post civil contour maps.</p> <p>Contamination report and details on remediation actions.</p>
<h3>1.3 URBAN ECOLOGY</h3> <p><b>INTENT:</b> 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.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> 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.</p> <p><b>1.3.2</b> Reduce urban heat island effect. This could be through:</p> <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction (e.g. open-grid pavement);</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	<p>Statement from registered landscape architect/horticulturalist.</p> <p>Evidence from environmental science professional, registered landscape architect (or related professional) and plans.</p>
<p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>1.3.3</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.</p> <p><b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.</p> <p><b>3 credits</b> – <i>brownfield site</i>.</p> <p><b>1.3.4</b> The project is a refurbishment (<b>2 credits</b>).</p>	<p>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.</p> <p>Details of existing use and pre and post refurbishment building envelope.</p>



Criteria	Required Supporting Documentation
<p><b>1.3.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i>, or for landscaping private areas prior to sale/lease are <i>locally native</i>. 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.</p> <p><b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.</p>	Landscape palette and statement from registered landscape architect.
<p><b>1.3.6</b> Include green roofs or green walls, incorporating native plants species into the project. Species selection should be informed by an <i>appropriately qualified professional</i> and should be designed to improve ecological function. A maintenance plan and non-potable irrigation supply should also be in place.</p>	Details on size, location and featured species. Statement from registered landscape architect and/or ecologist regarding how the green wall/roof will improve ecological function.
<p><b>1.3.7</b> Incorporate community and productive gardens in the project including space for garden plots, communal or individual vegetable gardens.</p>	Details on the location, maintenance and management of the community/productive gardens.
<p><b>1.3.8</b> Demonstrate that the planting palette for the project contains a mix of fast and slow growing species.</p>	Statement from registered landscape architect.
<p><b>1.3.9</b> Minimise noise pollution during and post construction.</p>	Construction management plan.
<p><b>1.3.10</b> Demonstrate appropriate consideration of viable planting spaces by:</p> <ul style="list-style-type: none"> <li>• utilising appropriate media with low organic content (5% or less);</li> <li>• utilise appropriate species for planting which address functionality requirements; and</li> <li>• demonstrate appropriate consideration of soil depths for the proposed or existing plantings.</li> </ul>	Statement from registered landscape architect.
<p><b>1.3.11</b> A minimum of 10% (or greater than regulatory standard) of the site is allocated for <i>deep planting</i>.</p>	Statement from registered landscape architect.
<p><b>1.3.12</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.

## Retail – Waste

To achieve certification in the Waste element, a *project* must achieve:

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- 2.3.1 and for developers that retain operational ownership, achieve 2.3.2-2.3.3 under Post-Construction Phase (2.3).

### Criteria

### Required Supporting Documentation

## 2.1 ESSENTIAL ACTION

**INTENT:** To identify the most suitable opportunities for recycling of resources available to the site.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. *Statement of compliance* from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

## 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the works. At a minimum, the waste management plan should include the following:

- waste generation;
- waste systems;
- minimisation strategy;
- performance/reduction targets;
- bin quantity and size;
- collection frequency;
- waste contractors;
- waste management facilities shown on plans;
- signage; and
- monitoring and reporting including frequency and method.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

**2.2.3** Recycle or reuse at least 60% of all built form construction waste (by volume).

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.

Evidence of a waste management plan. Quarterly reports, including waste records should be kept for compliance purposes.



Criteria	Required Supporting Documentation
<p><b>2.2.4</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p>	<p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for tenants to reduce waste going to landfill.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>2.3.1</b> Establish a plan for ongoing and regular engagement with tenants regarding waste minimisation and recycling. This should include:</p> <ul style="list-style-type: none"> <li>regular updates on the centre's waste generation;</li> <li>campaigns or an incentives program for tenants to increase recycling; and</li> <li>dissemination of waste minimisation information.</li> </ul>	<p>Details of program and content.</p>
<h3>DEVELOPERS THAT RETAIN OPERATIONAL OWNERSHIP</h3> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>2.3.2</b> Establish a plan for ongoing and regular engagement with tenants regarding waste minimisation and recycling. This should include:</p> <ul style="list-style-type: none"> <li>regular updates on the centre's waste generation;</li> <li>campaigns or an incentives program for tenants to increase recycling; and</li> <li>dissemination of waste minimisation information.</li> </ul>	<p>Details of program and content.</p>
<p><b>2.3.3</b> Dedicated storage for the separation, collection and recycling of waste is provided and is easily accessible by all tenants.</p>	<p>Evidence in plans and statement from local authority, architect or building designer.</p>



## Retail – Energy

To achieve certification in the Energy element, a *project* must achieve:

- for warehouse retail – **all** of the requirements under Climate Responsive Design (3.1);
- **all** of the requirements under Daylighting (3.2);
- 3.3.1 under Submetering (3.3);
- **all** the requirements under Lighting (3.4);
- 3.5.1 and **one** credit from 3.5.2-3.5.4 under HVAC (3.5);
- if the project includes any total enclosed or semi-enclosed car parks, **all** of the requirements under Car parks (3.6);
- if the project includes any lift systems, **all** of the requirements under Lift Systems (3.7); and
- 3.8.1 under Reduction in Greenhouse Gas Emissions (3.8).

### Criteria

### Required Supporting Documentation

## 3.1 CLIMATE RESPONSIVE DESIGN

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

### WAREHOUSE RETAIL

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** The project must be orientated to demonstrate positive passive design outcomes are maximised.

Provide evidence that building orientation, including the positioning of fenestration/access points, and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), overshadowing, glare and privacy.

**3.1.2** The project is designed to minimise extremities in temperatures, including negative microclimatic factors.

Statement from planner/architect/designer/engineer with reference to specific examples.

**3.1.3** The design of *public spaces* optimises microclimatic conditions at all times of the year.

Statement from planner/architect/designer/engineer with reference to specific examples.

## 3.2 DAYLIGHTING

**INTENT:** To ensure buildings provide good levels of daylight to reduce energy usage and provide psychological benefits to occupants.

**REQUIREMENT:** Achieve EACH of the following:

**3.2.1** Demonstrate how the design has considered and incorporated natural daylight into the project. This may include, but is not limited to:

- light reflecting surfaces/colours to enhance the distribution of light to internal spaces;
- provision of daylighting devices that provide natural daylight or diffused light to internalised spaces (e.g. clerestories, skylights or roof lights etc.); and/or
- zoning of spaces so that those spaces that benefit from natural light are located near sources of light.

Statement from architect/designer.

**3.2.2** Glare from daylight is reduced across the nominated area through any combination of the following:

- fixed shading devices shade the working plane, 1.5m in from the centre of the glazing, from direct sun at desk height (720mm *AFFL*) for 80% of standard occupancy hours;
- blinds or screens are fitted on all glazing and atriums as a base building provision; and/or
- perimeter lighting.

Statement from architect/designer.



Criteria	Required Supporting Documentation
<h3>3.3 SUBMETERING</h3> <p><b>INTENT:</b> To ensure each tenant has the opportunity to monitor and manage energy usage.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.3.1</b> Each individual tenancy is sub-metered.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<h3>3.4 LIGHTING</h3> <p><b>INTENT:</b> To increase the energy efficiency of lighting throughout the project.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>3.4.1</b> Provide efficient outdoor lighting such as through utilising solar power, fluorescent or LED fittings.</p>	Evidence in masterplan or electrical plans with <i>statement of compliance</i> from engineer or developer.
<p><b>3.4.2</b> Automated lighting control, including occupant detection and daylight adjustment is provided.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<p><b>3.4.3</b> Utilise efficient lighting for carparks and employ strategies to reduce energy usage. This may include but is not limited to the use of:</p> <ul style="list-style-type: none"> <li>• reflective diffusers;</li> <li>• timers; and/or</li> <li>• motion sensors.</li> </ul>	Evidence in masterplan or electrical plans with <i>statement of compliance</i> from engineer or developer.
<h3>3.5 HVAC</h3> <p><b>INTENT:</b> To increase the energy efficiency of HVAC systems throughout the project.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.5.1</b> Demonstrate how the design has considered and incorporated natural breezes, cross ventilation, thermal mass and other design elements relevant to the climate zone of the project to reduce the need for artificial heating and cooling.</p>	Evidence in plans with statement from architect.
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>3.5.2</b> The HVAC system in each separate enclosed space within the nominated area is designed to be automatically shut down when not in use.</p>	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<p><b>3.5.3</b> The HVAC system is designed to allow a wider temperature control band when not in use (minimum of an additional two degrees in each direction is required).</p>	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<p><b>3.5.4</b> Install carbon dioxide monitoring devices to single HVAC systems which have a capacity over 20kW.</p>	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.

Criteria	Required Supporting Documentation
<h3>3.6 CARPARKS</h3> <p><b>INTENT:</b> To reduce the energy usage associated with ventilating carpark within buildings.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>3.6.1</b> Install carbon monoxide monitoring/controls to carpark exhaust systems.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer.
<p><b>3.6.2</b> 25% of the total enclosed/semi-enclosed carpark by area is naturally ventilated, or 50% of the total enclosed/semi-enclosed carpark has either passive supply or passive exhaust.</p>	Statement from engineer and evidence in plans.
<h3>3.7 LIFT SYSTEMS</h3> <p><b>INTENT:</b> To reduce the energy usage of lift systems within buildings.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.7.1</b> Where lifts are installed in the project, demonstrate consideration of lift power systems that are energy efficient and environmentally friendly.</p> <p>This includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• use of regenerative drives;</li> <li>• machine room-less elevators;</li> <li>• dispatch control systems;</li> <li>• intelligent automation; and/or</li> <li>• stand-by modes.</li> </ul>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<h3>3.8 REDUCTION IN GREENHOUSE GAS EMISSIONS</h3> <p><b>INTENT:</b> To reduce greenhouse gas emissions within the project.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.8.1</b> Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.</p> <p>This could be achieved through:</p> <ul style="list-style-type: none"> <li>• alternative energy sources (e.g. solar power or other non-polluting, renewable power source);</li> <li>• energy efficient appliances and fixtures;</li> <li>• reduction through design; and/or</li> <li>• demand/behavioural management.</li> </ul>	Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements (i.e. calculations on the energy balance).



## Retail – Materials

To achieve certification in the Materials element, a *project* must achieve:

- **three** requirements from the ‘Civil Works’ (4.1.1–4.1.4) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1);
- **three** requirements from the ‘Built Form’ (4.1.5–4.1.8) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1); and
- **two** credits from 4.2.1–4.2.5 under Emissions (4.2).

### Criteria

### Required Supporting Documentation

## 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

### CIVIL WORKS

#### 4.1.1 Roads

Statement from supplier and supporting technical information.

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base.

#### 4.1.2 Services

Statement from quantity surveyor and/or supplier and supporting technical information.

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

#### 4.1.3 Hard Landscaping

Statement from supplier and supporting technical information.

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.

#### 4.1.4 Soft Landscaping

Statement from landscape architect, including details of quantities, uses and attributes.

Throughout the project:

- any vegetative debris from the site is mulched and reused; and
- any non-contaminated topsoil is stockpiled and reused within the site.

Criteria	Required Supporting Documentation
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate;  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated.</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials;</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and/or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	Statement from quantity surveyor and/or supplier and supporting technical information.
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	Statement from supplier and supporting technical information.



Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>• ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>• ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (kgCO<sub>2</sub>e/gross building area/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<p><b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are EO rated.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>



## Retail – Water

To achieve certification in the Water element, a *project* must achieve:

- 5.1.1 under Reduction in Potable Water Demand (5.1);
- 5.2.1 under Submetering (5.2); and
- **all** of the requirements under Irrigation Requirements (5.3).

### Criteria

### Required Supporting Documentation

## 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce *potable water* consumption within retail centres and stores.

**REQUIREMENT:** Achieve the following:

**5.1.1** Reduce *potable water* usage within the project (excluding common area irrigation requirements captured in 5.3.1) by at least 20% more than required under relevant Federal and State government regulatory means.

This may be achieved by any or a combination of the following means:

- stormwater harvesting;
- plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);
- greywater reuse (e.g. plumbing to facilitate reuse of greywater on site);
- rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or
- water use efficiency (e.g. fittings with a higher WELS rating than mandated through regulation, rainwater tanks with larger capacity than mandated).

Certification by engineer or local government engineer or development assessment officer or other *appropriately qualified professional* (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient stormwater will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)

Worked calculations showing how initiatives will achieve at least 20% reduced *potable water* usage compared to regulatory requirements.

## 5.2 SUBMETERING

**INTENT:** To ensure each tenant has the opportunity to monitor and manage water usage.

**REQUIREMENT:** Achieve the following:

**5.2.1** Each individual tenancy is sub-metered.

Evidence in plans with *statement of compliance* from engineer or developer.

## 5.3 IRRIGATION REQUIREMENTS

**INTENT:** To reduce the use of *potable water* for irrigation purposes in the public realm.

**REQUIREMENT:** Achieve EACH of the following:

**5.3.1** Use drought tolerant species which have no irrigation requirements for the public realm.

Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through:

- stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);
- plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);
- greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);
- rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or
- use of underground water sources.

**Note:** the following exemptions may apply:

- *potable water* used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover); and
- *potable water* used to irrigate non-commercial food production gardens.

Landscape palette and statement from landscape architect.

Certification by engineer or local government engineer or development assessment officer or other *appropriately qualified professional* (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)

If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.



Criteria	Required Supporting Documentation
<b>5.3.2</b> Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage. Mulch must be applied to planted areas and maintained.	Irrigation plan or statement from landscape architect regarding irrigation methods.
<b>5.3.3</b> Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.	Statement from registered landscape architect.
<b>5.3.4</b> Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.	Statement from registered landscape architect.

## 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)

### Criteria

### Required Supporting Documentation

## 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability and liveability goals including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between visitors/employees and other local people using the area, according to Crime Prevention Through Environmental Design (*CPTED*).

Evidence in plans, and statement from planner.

## 6.2 COMMUNITY CONSULTATION, PLANNING AND DEVELOPMENT

**INTENT:** To proactively and meaningfully engage in effective and informed consultation with the local community.

**REQUIREMENT:** Achieve EACH of the following:

**6.2.1** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Consultation/stakeholder engagement strategy.

**6.2.2** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

**6.2.3** Consider and appropriately conserve and/or recognise and respect indigenous and post-European cultural heritage. Cultural heritage investigations should be conducted in accordance with the minimum standards outlined in the Burra Charter (1999) using the services of appropriately qualified professionals.

Evidence of recognition and protection or considerate reuse of cultural heritage sites or structures (and artefacts) if applicable and in keeping with advice from traditional owners, long-term locals or historical advisors.

This could include:

- evidence of voluntary liaison with traditional owner, if such a group can be identified, and the consideration of Indigenous cultural values in the processes, design and construction of the project; and/or
- evidence of consideration of significant post European cultural heritage, such as retaining significant trees, fences, old machinery and structures of significance, interpretive signage, research of site history and publication, promotion and incorporation in the design and naming of elements.



Criteria	Required Supporting Documentation
<b>6.3 EFFICIENT AND ACCESSIBLE TRANSPORT</b> <b>INTENT:</b> To reduce reliance on private cars as the primary mode of transport. <b>REQUIREMENT:</b> Achieve the following:	
<b>6.3.1</b> Demonstrate encouragement of active transport options amongst the community.	Details of programs including timeframes.
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.3.2 Bicycle Parking</b> Cyclist facilities (including secure storage and end of trip facilities) are provided for 5% of staff, and one per 1,000m <sup>2</sup> of floor space for visitors.	Evidence in plans, and statement from engineer or masterplanner or developer stating how the requirements have been met.
<b>6.3.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathway spaces (including streets and open spaces). Also connect with paths in neighbouring areas, properties and facilities. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.	Evidence in plans, and statement from landscape architect and developer stating how the requirements have been met.
<b>6.3.4 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within: <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> The stop/station must be serviced by at least ten services per weekday (by the time the building(s) within the project are 50% occupied) to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.	Evidence of existing transport location(s) and frequency of service. If public transport stop is proposed, details of proposal to local government and negotiations to date should be provided.
<b>6.3.5 Community Transport</b> Provide a community transport network such as car share, car pool or community minibus to facilities.	Evidence including arrangements and frequency.
<b>6.3.6 Low-Emitting and Fuel-Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles within the project for 5% of the total vehicle parking capacity.	Evidence including distribution and eligibility

Criteria	Required Supporting Documentation
<h2>6.4 ENGAGING AND INCLUSIVE PUBLIC REALM</h2> <p><b>INTENT:</b> To ensure the delivery of a high quality public realm which provides an attractive, inclusive, non-discriminatory and safe environment for the community to meet and engage.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.4.1</b> At least two designated places within the centre with direct physical connection to the natural environment which:</p> <ul style="list-style-type: none"> <li>• are a minimum size each of 25m<sup>2</sup>;</li> <li>• are universally accessible and well lit;</li> <li>• are located to avoid noise, odour and air pollution;</li> <li>• a minimum of 30% of the area of the public realm is soft landscaping;</li> <li>• includes seating;</li> <li>• includes shaded areas; and</li> <li>• are screened from prevailing winds.</li> </ul>	Evidence in plans and statement from landscape architect and architect.
<h2>6.5 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.5.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>• economic goals and priorities for the community;</li> <li>• employment targets and the job balance ratio;</li> <li>• activities to be provided within the project e.g. retail, industrial, commercial or community based;</li> <li>• socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>• how the project will contribute to the host local government area's socio-economic profile; and</li> <li>• net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	Statement of compliance from developer and evidence of community economic/employment strategy and implementation plan.
<h2>6.6 HEALTHY AND ACTIVE COMMUNITIES</h2> <p><b>INTENT:</b> To design and deliver projects which promote community-based physical activity and support healthy lifestyle behaviours.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<b>6.6.1</b> Provide safe and direct access to the project for pedestrians, cyclists and public transport vehicles.	Evidence in plans and statement from planner.
<b>6.6.2</b> Ensure that there is an interaction or active frontage with a street to encourage active surveillance.	Evidence in plans and statement from planner.
<b>6.6.3</b> Ensure the location and management of parking does not undermine the comfort and safety of pedestrians.	Evidence in plans and statement from planner.
<b>6.6.4</b> Provide support facilities to encourage interaction and useability including seating, water fountains, shelter, public toilets and signage.	Evidence in plans and statement from planner.

# Education



**Project:** University of the Sunshine Coast

**Developer:** University of the Sunshine Coast

**Certification:** 6 elements (ecosystems, waste, energy, materials, water, community)

Certified 2011



# Education – 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 1.4.3-1.4.12 under Urban Ecology (1.4).

## Criteria

## Required Supporting Documentation

### 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides and herbicides.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

### 1.2 SOIL HEALTH

**INTENT:** To ensure construction practices retain the ecological integrity of the soil to assist in achieving better environmental outcomes in the public realm.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Take soil samples in areas that are to be retained for vegetative growth to ensure an understanding of soil characteristics. For soils used for revegetation purposes, the organic content of the soil, pH and nutrient status shall be similar to that of undisturbed native soils of ecosystems that support the appropriate plant species intended for the site.

Soil or landscape management plan, including test results.

**1.2.2** Unless soil is heavily contaminated, retain insitu or stockpile and reuse all topsoil to best advantage on site. Where topsoil is minimal or absent and subsoil is deemed suitable for amendment, stockpile subsoil on site.

Evidence in plans of topsoil stockpile location and management requirements.

**Note:** Wherever possible, stockpiles should be no more than 1.5m high with maximum 1:2 batter and once stockpiling completed, covered with a green cover crop to avoid erosion, desiccation and solarisation.



Criteria	Required Supporting Documentation
<p><b>1.2.3</b> Minimise access to site by vehicles to nominated roadways or parking areas, well away from existing trees or intended public realm areas, to minimise compaction. Rip compacted soil once building works are completed. Ensure building wastes, particularly liquid wastes do not contaminate the soil.</p>	Construction management plan, identifying access locations.
<p><b>1.2.4</b> Recycle and reuse all vegetative debris on site (e.g. for topsoil augmentation or composting purposes). If onsite reuse is not feasible, arrangements should be made for green waste to be transported for reuse or disposed of at a fully licensed recycler or reprocessor. There should be no pit burning of green waste on site or disposal to landfill.</p>	Statement from developer and registered landscape architect.
<p><b>1.2.5</b> Amend, mulch and revegetate soils disturbed during construction as well as soils on the remainder of the site where the site has formerly been used for farming, forestry, industrial, commercial or urban land uses. Demonstrate that soils are suitable for intended purposes.</p>	Soil or landscape management plan.
<h3>1.3 EARTHWORKS</h3> <p><b>INTENT:</b> To reduce the disturbance of construction works on the site's natural topography and nearby waterways.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> Conduct thorough site analysis prior to planning and design to identify:</p> <ul style="list-style-type: none"> <li>• areas of prime ecological significance;</li> <li>• areas where clearing and/or major earthworks should specifically not occur;</li> <li>• potential soil issues (e.g. dispersive soils); and</li> <li>• the suitability of the site for earthworks and construction.</li> </ul> <p>The project must adequately consider and preserve significant areas based on the advice of this report.</p>	Site analysis outlining areas which require protection.
<p><b>1.3.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.</p> <p><b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p>	Statement from engineer.
<p><b>1.3.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant Federal, State and Local legislative and regulatory requirements.</p>	Erosion and sediment control plan/soil and water management plan, staging plan and <i>statement of compliance</i> from an <i>appropriately qualified professional</i> .
<p><b>1.3.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p>	Statement from engineer.
<p><b>1.3.5</b> Design and construct street layout to fit with topography with minimal disruption.</p> <p><b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.</p>	Pre and post civil contour maps.
<p><b>1.3.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	Contamination report and details on remediation actions.

Criteria	Required Supporting Documentation
<b>1.4 URBAN ECOLOGY</b> <b>INTENT:</b> 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. <b>REQUIREMENT:</b> Achieve EACH of the following:	
<b>1.4.1</b> 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.	Statement from registered landscape architect/horticulturalist.
<b>1.4.2</b> Reduce urban heat island effect. This could be through: <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction (e.g. open-grid pavement);</li> <li>• incorporation of breezeways and greenways;</li> <li>• provision of shading to roads, footpaths and bicycle paths;</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	Evidence from environmental science professional, registered landscape architect (or related professional) and plans.
<b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:	
<b>1.4.3</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value. <b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i> . <b>2 credits</b> – >75% of the site area has been <i>significantly modified</i> . <b>3 credits</b> – <i>brownfield site</i> .	Details of use of site prior to new project including pre-project site photos and statement from environmental professional/registered landscape architect/related professional detailing ecological value of the site prior to project.
<b>1.4.4</b> The project is a refurbishment ( <b>2 credits</b> ).	Details of existing use and pre and post refurbishment building envelope.
<b>1.4.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i> , or for landscaping private areas prior to sale are <i>locally native</i> . 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. <b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.	Landscape palette and statement from registered landscape architect.
<b>1.4.6</b> Include green roofs or green walls, incorporating native plants species, into the project. Species selection should be informed by an <i>appropriately qualified professional</i> and should be designed to improve ecological function. A maintenance plan and non-potable irrigation supply should also be in place.	Details on size, location and featured species. Statement from registered landscape architect and/or ecologist regarding how the green wall/roof will improve ecological function.
<b>1.4.7</b> Incorporate community and productive gardens in the project including space for garden plots, communal or individual vegetable gardens.	Details on the location, maintenance and management of the community/productive gardens.
<b>1.4.8</b> Demonstrate that the planting palette for the project contains a mix of fast and slow growing species.	Statement from registered landscape architect.



Criteria	Required Supporting Documentation
<p><b>1.4.9</b> Demonstrate appropriate consideration of viable planting spaces by:</p> <ul style="list-style-type: none"> <li>• utilising appropriate media with low organic content (5% or less);</li> <li>• utilise appropriate species for planting which address functionality requirements; and</li> <li>• demonstrate appropriate consideration of soil depths for the proposed or existing plantings.</li> </ul> <p><b>1.4.10</b> Minimise noise pollution during and post construction.</p> <p><b>1.4.11</b> A minimum of 10% (or greater than regulatory standard) of the site is allocated for <i>deep planting</i>.</p> <p><b>1.4.12</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	<p>Statement from registered landscape architect.</p> <p>Construction management plan.</p> <p>Statement from registered landscape architect.</p> <p>When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.</p>

## Education – Waste

To achieve certification in the Waste element, a *project* must achieve:

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- **all** the requirements under Post-Construction Phase (2.3).

### Criteria

### Required Supporting Documentation

## 2.1 ESSENTIAL ACTION

**INTENT:** To ensure there is a clear strategy which facilitates the recycling of resources and reduces waste going to landfill.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. *Statement of compliance* from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

## 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the works. At a minimum, the waste management plan should include the following:

- waste generation;
- waste systems;
- minimisation strategy;
- performance/reduction targets;
- bin quantity and size;
- collection frequency;
- waste contractors;
- waste management facilities shown on plans;
- signage; and
- monitoring and reporting including frequency and method.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.



Criteria	Required Supporting Documentation
<p><b>2.2.3</b> Recycle or reuse at least 60% of all built form construction waste (by volume).</p> <p><b>2.2.4</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p>	<p>Evidence of a waste management plan. Quarterly reports, including waste records should be kept for compliance purposes.</p> <p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for end users to reduce waste going to landfill.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>2.3.1</b> Provide separate waste receptacles for general and recyclable waste.</p> <p><b>2.3.2</b> Provide a compost facility if possible and practical on site (e.g. if there is also a garden of sufficient size to use it on). Compost facility should be at least one cubic metre in size and can be used to recycle a balanced mix of green material (fruit and vegetable scraps) and brown material (twigs).</p>	<p>Details of location.</p> <p>Details of location.</p>



## Education – Energy

To achieve certification in the Energy element, a *project* must achieve:

- **all** of the requirements under Climate Responsive Design (3.1);
- **all** of the requirements under Daylighting (3.2);
- 3.3.1 under Submetering (3.3);
- **all** the requirements under Lighting (3.4);
- 3.5.1 and 3.5.2 and **one** credit from 3.5.3-3.5.5 under HVAC (3.5);
- if the project includes any total enclosed or semi-enclosed carparks, **all** of the requirements under Carparks (3.6);
- if the project includes any lift systems, **all** of the requirements under Lift Systems (3.7); and
- 3.8.1 under Reduction in Greenhouse Gas Emissions (3.8).

### Criteria

### Required Supporting Documentation

## 3.1 CLIMATE RESPONSIVE DESIGN

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

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** The project must be orientated to demonstrate positive passive design outcomes are maximised.

Provide evidence that building orientation, including the positioning of fenestration/access points, and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), overshadowing, glare and privacy.

**3.1.2** The project is designed to minimise adverse conditions, including negative microclimatic factors.

Statement from planner/architect/designer/engineer with reference to specific examples.

**3.1.3** The design of *public spaces* optimises microclimatic conditions at all times of the year.

Statement from planner/architect/designer/engineer with reference to specific examples.

## 3.2 DAYLIGHTING

**INTENT:** To ensure buildings provide good levels of daylight to reduce energy usage and provide psychological benefits to occupants.

**REQUIREMENT:** Achieve EACH of the following:

**3.2.1** Demonstrate how the design has considered and incorporated natural daylight into the project. This may include, but is not limited to:

- light reflecting surfaces/colours to enhance the distribution of light to internal spaces;
- provision of daylighting devices that provide natural daylight or diffused light to internalised spaces (e.g. clerestories, skylights or roof lights etc.); and/or
- zoning of spaces so that those spaces that benefit from natural light are located near sources of light.

Statement from architect/designer.

**3.2.2** Glare from daylight is reduced across the nominated area through any combination of the below:

- fixed shading devices shade the working plane, 1.5m in from the centre of the glazing, from direct sun at desk height (720mm *AFFL*) for 80% of standard occupancy hours;
- where blinds or screens are fitted on all glazing and atriums as a base building provision; and/or
- perimeter lighting.

Statement from architect/designer.



Criteria	Required Supporting Documentation
<h3>3.3 SUBMETERING</h3> <p><b>INTENT:</b> To ensure the provision of sub-metering to assist in the ongoing monitoring of energy usage throughout the project.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.3.1</b> Submetering is provided to separately monitor lighting and general power consumption for primary functional areas including class/lecture/tutorial areas, office/administration space and laboratories.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<h3>3.4 LIGHTING</h3> <p><b>INTENT:</b> To increase the energy efficiency of lighting throughout the project.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>3.4.1</b> Provide efficient outdoor lighting such as through utilising solar power, fluorescent or LED fittings.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<p><b>3.4.2</b> Automated lighting control, including occupant detection and daylight adjustment is provided.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<p><b>3.4.3</b> Reduce reliance on lighting by providing outdoor spaces (breakout/gathering spaces) that allow students and staff to study, meet and work.</p>	Evidence in plans with statement from architect.
<h3>3.5 HVAC</h3> <p><b>INTENT:</b> To increase the energy efficiency of HVAC systems throughout the project.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>3.5.1</b> Demonstrate how the design has considered and incorporated natural breezes, cross ventilation, thermal mass and other design elements relevant to the climate zone into the project to reduce the need for artificial heating and cooling.</p>	Evidence in plans with statement from architect.
<p><b>3.5.2</b> Incorporate ceiling fans within teaching rooms and staff areas.</p>	Evidence in electrical plans with <i>statement of compliance</i> architect/designer.
<p><b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:</p>	
<p><b>3.5.3</b> The HVAC system in each separate enclosed space within the nominated area is designed to be automatically shut down when not in use.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<p><b>3.5.4</b> The HVAC system is designed to allow a wider temperature control band when not in use (minimum of an additional two degrees in each direction is required).</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<p><b>3.5.5</b> Install carbon dioxide monitoring devices to single HVAC systems which have a capacity over 20kW.</p>	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<h3>3.6 CARPARKS</h3> <p><b>INTENT:</b> To reduce the energy usage associated with ventilating carparks within buildings.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>3.6.1</b> Install CO monitoring/controls to carpark exhaust systems.</p>	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<p><b>3.6.2</b> 25% of the total enclosed/semi-enclosed carpark by area is naturally ventilated, or 50% of the total enclosed/semi-enclosed carpark has either passive supply or passive exhaust.</p>	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.

Criteria	Required Supporting Documentation
<b>3.7 LIFT SYSTEMS</b> <b>INTENT:</b> To reduce the energy usage of lift systems within buildings. <b>REQUIREMENT:</b> Achieve the following:	
<b>3.7.1</b> Where lifts are installed in the project, demonstrate consideration of lift power systems that are energy efficient and environmentally friendly. This includes but is not limited to: <ul style="list-style-type: none"> <li>• use of regenerative drives;</li> <li>• machine room-less elevators;</li> <li>• dispatch control systems;</li> <li>• intelligent automation; and/or</li> <li>• stand-by modes.</li> </ul>	Evidence in electrical plans with <i>statement of compliance</i> from engineer.
<b>3.8 REDUCTION IN GREENHOUSE GAS EMISSIONS</b> <b>INTENT:</b> To reduce greenhouse gas emissions within the project. <b>REQUIREMENT:</b> Achieve the following:	
<b>3.8.1</b> Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.  This could be achieved through: <ul style="list-style-type: none"> <li>• alternative energy sources (e.g. solar power or other non-polluting, renewable power source);</li> <li>• energy efficient appliances and fixtures;</li> <li>• reduction through design; and/or</li> <li>• demand/behavioural management.</li> </ul>	Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements (i.e. calculations on the energy balance).



## Education – Materials

To achieve certification in the Materials element, a *project* must achieve:

- **three** requirements from the ‘Civil Works’ (4.1.1–4.1.4) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1);
- **three** requirements from the ‘Built Form’ (4.1.5–4.1.8) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1); and
- **two** credits from 4.2.1–4.2.5 under Emissions (4.2).

### Criteria

### Required Supporting Documentation

## 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

### CIVIL WORKS

#### 4.1.1 Roads

Statement from supplier and supporting technical information.

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base.

#### 4.1.2 Services

Statement from quantity surveyor and/or supplier and supporting technical information.

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

#### 4.1.3 Hard Landscaping

Statement from supplier and supporting technical information.

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.

#### 4.1.4 Soft Landscaping

Statement from landscape architect, including details of quantities, uses and attributes.

Throughout the project:

- any vegetative debris from the site is mulched and reused; and
- any non-contaminated topsoil is stockpiled and reused within the site.

Criteria	Required Supporting Documentation
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate;  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated.</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials;</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and/or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	Statement from quantity surveyor and/or supplier and supporting technical information.
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	Statement from supplier and supporting technical information.



Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>• ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>• ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (kgCO<sub>2</sub>e/gross building area/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<p><b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are EO rated.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>



## Education – Water

To achieve certification in the Water element, a *project* must achieve:

- 5.1.1 under Reduction in Potable Water Demand (5.1);
- 5.2.1 under Submetering (5.2); and
- **all** of the requirements under Irrigation Requirements (5.3); and
- if the project includes any swimming pools, **all** of the requirements under Swimming Pools (5.4).

### Criteria

### Required Supporting Documentation

## 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce *potable water* consumption within buildings.

**REQUIREMENT:** Achieve the following:

**5.1.1** Reduce *potable water* usage within the project (excluding common area irrigation requirements captured in 5.3.1) by at least 20% more than required under relevant Federal and State government regulatory means.

This may be achieved by any or a combination of the following means:

- stormwater harvesting;
- plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);
- greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);
- rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or
- water use efficiency (e.g. fittings with a higher WELS rating than mandated through regulation, rainwater tanks with larger capacity than mandated).

Certification by engineer or local government engineer or development assessment officer or other appropriately qualified professional (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient stormwater will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)

Worked calculations showing how initiatives will achieve at least 20% reduced potable water usage compared to regulatory requirements.

## 5.2 SUBMETERING

**INTENT:** To ensure each occupant has the opportunity to monitor and manage water usage.

**REQUIREMENT:** Achieve the following:

**5.2.1** Utilise smart metering systems to allow monitoring of water consumption. Smart metering system should include features such as leak detection and submetering of key uses.

Evidence in plans with *statement of compliance* from engineer or developer.

## 5.3 IRRIGATION REQUIREMENTS

**INTENT:** To reduce the use of *potable water* for irrigation purposes in external areas.

**REQUIREMENT:** Achieve EACH of the following:

**5.3.1** Use drought tolerant species which have no irrigation requirements for the public realm.

Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through:

- stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);
- plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);
- greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);
- rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or
- use of underground water sources.

**Note:** the following exemptions may apply:

- *potable water* used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover); and
- *potable water* used to irrigate non-commercial food production gardens.

Landscape palette and statement from landscape architect.

Certification by engineer or local government engineer or development assessment officer or other *appropriately qualified professional* (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)

If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.



Criteria	Required Supporting Documentation
<p><b>5.3.2</b> Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage. Mulch must be applied to planted areas and maintained.</p>	Irrigation plan or statement from landscape architect regarding irrigation methods.
<p><b>5.3.3</b> Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.</p>	Statement from registered landscape architect.
<p><b>5.3.4</b> Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.</p>	Statement from registered landscape architect.
<h2>5.4 SWIMMING POOLS</h2> <p><b>INTENT:</b> To reduce potable water usage through the reduction of water losses through evaporation.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>5.4.1</b> Where an outdoor swimming pool is included within the project, a pool blanket is included.</p>	Statement from developer.
<p><b>5.4.2</b> Where a swimming pool is included within the project, ensure there is a backwash minimisation system in place (e.g. cartridge filter, filter utilising cyclone technology, oversized sand filter, centrifugal/pre-filter device, backwash recycling system or similar).</p>	Statement from developer.

## Education – 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)
  - Community Prosperity (6.4)
  - Local Facilities (6.5)

### Criteria

### Required Supporting Documentation

## 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability and liveability goals including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between students/visitors/employees and other local people using the area, according to Crime Prevention Through Environmental Design (CPTED).

Evidence in plans, and statement from planner.

## 6.2 COMMUNITY CONSULTATION, PLANNING AND DEVELOPMENT

**INTENT:** To proactively and meaningfully engage in effective and informed consultation with the local community.

**REQUIREMENT:** Achieve EACH of the following:

**6.2.1** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Consultation/stakeholder engagement strategy.

**6.2.2** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

**6.2.3** Consider and appropriately conserve and/or recognise and respect indigenous and post-European cultural heritage. Cultural heritage investigations should be conducted in accordance with the minimum standards outlined in the Burra Charter (1999) using the services of appropriately qualified professionals.

Evidence of recognition and protection or considerate reuse of cultural heritage sites or structures (and artefacts) if applicable and in keeping with advice from traditional owners, long-term locals or historical advisors.

This could include:

- evidence of voluntary liaison with traditional owner, if such a group can be identified, and the consideration of Indigenous cultural values in the processes, design and construction of the project; and
- evidence of consideration of significant post European cultural heritage, such as retaining significant trees, fences, old machinery and structures of significance, interpretive signage, research of site history and publication, promotion and incorporation in the design and naming of elements.

## 6.3 EFFICIENT AND ACCESSIBLE TRANSPORT

**INTENT:** To reduce reliance on private cars as the primary mode of transport.

**REQUIREMENT:** Achieve the following:

**6.3.1** Demonstrate encouragement of active transport options amongst the community.

Details of programs including timeframes.



Criteria	Required Supporting Documentation
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<b>6.3.2 Bicycles</b> Provide at least one secure bicycle storage space per five students (over grade 4) and cyclist facilities for 5% of staff. End of trip facilities must be provided in excess of State and Local government requirements. If no current State or Local government policy exists on this topic, compliance with Queensland Transport's End-of-Trip Facilities for Bicycle Riders Guide will be expected.	Evidence in plans, and statement from engineer or masterplanner or developer stating how the requirements have been met.
<b>6.3.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathway spaces (including streets and open spaces). Also connect with paths in neighbouring areas, properties and facilities. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.	Evidence in plans, and statement from landscape architect and developer stating how the requirements have been met.
<b>6.3.4 Active Transport Linkages</b> Provide shared pathways for both walking and cycling. The width of the pathway should be a minimum of 3m and designed appropriately for the anticipated level of pedestrian and bicycle use, and the likely speed of cyclists and the required clearances. OR Provide pathways on both sides of all roads within the project.	Evidence in plans and/or statement on how the requirements have been met.
<b>6.3.5 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within: <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> The stop/station must be serviced by at least ten services per weekday, linking the project to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.	Evidence of existing transport location(s) and frequency of service together with details of proposal to council and negotiations to date.
<b>6.3.6 Shared Transport</b> Support/encourage community transport networks such as car pool or community minibus to facilities.	Evidence including arrangements and frequency.
<b>6.3.7 Low-Emitting and Fuel-Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles within the project for 5% of the total vehicle parking capacity of each site.	Evidence including the location and number of parks.

Criteria	Required Supporting Documentation
<h2>6.4 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.4.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>• economic goals and priorities for the community;</li> <li>• employment targets and the job balance ratio;</li> <li>• activities to be provided within the project (e.g. retail, industrial, commercial or community based);</li> <li>• socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>• how the project will contribute to the host local government area's socio-economic profile; and</li> <li>• net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	<p><i>Statement of compliance</i> from developer and evidence of community economic/employment strategy and implementation plan.</p>
<h2>6.5 LOCAL FACILITIES</h2> <p><b>INTENT:</b> To provide integrated communities to meet local needs and reduce the number of private car trips required.</p> <p><b>REQUIREMENT:</b> Locate near (such that 75% of residences/workplaces are within 1km by foot) or provide within two years of the first occupancy at least FIVE of the following local services.</p> <p><b>Note:</b> Local facilities should be co-located near public transport stops and pathways.</p>	
<p><b>6.5.1</b> Newsagent</p> <p><b>6.5.2</b> Grocery/corner store</p> <p><b>6.5.3</b> Primary school</p> <p><b>6.5.4</b> Secondary school</p> <p><b>6.5.5</b> University</p> <p><b>6.5.6</b> Kindergarten, preschool, or childcare</p> <p><b>6.5.7</b> Medical practice</p> <p><b>6.5.8</b> Chemist</p> <p><b>6.5.9</b> Specialty stores</p> <p><b>6.5.10</b> Cafes and/or restaurants</p> <p><b>6.5.11</b> Community centre</p> <p><b>6.5.12</b> Public transport hub</p> <p><b>6.5.13</b> Bank or cash machine</p> <p><b>6.5.14</b> Post office</p> <p><b>6.5.15</b> Emergency services (including rural fire brigade, ambulance, police)</p> <p><b>6.5.16</b> Community accessible facilities/spaces (e.g. rooms, public areas, education centres)</p> <p><b>6.5.17</b> Educational facility or material (e.g. interpretive signage, tours, open days, brochures)</p>	<p>Evidence in plans, including walking distances.</p>



# Health and Aged Care





# Health and Aged Care – 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 1.4.3-1.4.12 under Urban Ecology (1.4).

## Criteria

## Required Supporting Documentation

### 1.1 AQUATIC ECOSYSTEMS

**INTENT:** To ensure sustainable management of water resources within, impacted or drawn upon by the project and the preservation of the ecological function of the local area's aquatic ecosystems.

**REQUIREMENT:** Achieve EACH of the following:

**1.1.1** Provide a stormwater management plan which demonstrates:

- protection and enhancement of natural surface and groundwater hydrological regime including riparian zones and buffers (where relevant depending on site) in consideration of the stability, ecological integrity and functionality of receiving environments. This includes incorporating and protecting any significant natural aquatic ecosystem features into the project design;
- incorporation of integrated water cycle management principles (surface water, groundwater, water quality) into project design including water sensitive urban design devices. Set quantifiable water quality targets which exceed planning/legislative requirements and verify design through accepted modelling (e.g. *MUSIC*). Recognition can also be given for stormwater reuse (such as infill sites) where appropriate water treatment measures and infrastructure are to be utilised;
- appropriate drainage to protect both water cycle and infrastructure; and
- incorporation of adequate stormwater management provisions during and post construction to avoid enhanced risk of flooding and flood damage and to reduce risk of pollution entering waterways. Design and construct to limit the post-project peak one-year *ARI* event discharge to the receiving waterway to the pre-project peak one-year *ARI* event discharge, for sites that are upstream of erodible waterways. Must also consider impact on and from adjacent sites.

Stormwater management plan/integrated water cycle management plan/better urban water management plan.

**1.1.2** Utilise techniques which are highly efficient and reduce the application of pesticides and herbicides.

Statement outlining steps to minimise use of pesticides, herbicides and artificial fertilisers and/or weed management plan.

### 1.2 SOIL HEALTH

**INTENT:** To ensure construction practices retain the ecological integrity of the soil to assist in achieving better environmental outcomes in the public realm.

**REQUIREMENT:** Achieve EACH of the following:

**1.2.1** Take soil samples in areas that are to be retained for vegetative growth to ensure an understanding of soil characteristics. For soils used for revegetation purposes, the organic content of the soil, pH and nutrient status shall be similar to that of undisturbed native soils of ecosystems that support the appropriate plant species intended for the site.

Soil or landscape management plan, including test results.

**1.2.2** Unless soil is heavily contaminated, retain insitu or stockpile and reuse all topsoil to best advantage on site. Where topsoil is minimal or absent and subsoil is deemed suitable for amendment, stockpile subsoil on site.

Evidence in plans of topsoil stockpile location and management requirements.

**Note:** Wherever possible, stockpiles should be no more than 1.5m high with maximum 1:2 batter and once stockpiling completed, covered with a green cover crop to avoid erosion, desiccation and solarisation.



Criteria	Required Supporting Documentation
<p><b>1.2.3</b> Minimise access to site by vehicles to nominated roadways or parking areas, well away from existing trees or intended public realm areas, to minimise compaction. Rip compacted soil once building works are completed. Ensure building wastes, particularly liquid wastes do not contaminate the soil.</p>	Construction management plan, identifying access locations.
<p><b>1.2.4</b> Recycle and reuse all vegetative debris on site (e.g. for topsoil augmentation or composting purposes). If onsite reuse is not feasible, arrangements should be made for green waste to be transported for reuse or disposed of at a fully licensed recycler or reprocessor. There should be no pit burning of green waste on site or disposal to landfill.</p>	Statement from developer and registered landscape architect.
<p><b>1.2.5</b> Amend, mulch and revegetate soils disturbed during construction as well as soils on the remainder of the site where the site has formerly been used for farming, forestry, industrial, commercial or urban land uses. Demonstrate that soils are suitable for intended purposes.</p>	Soil or landscape management plan.
<h3>1.3 EARTHWORKS</h3> <p><b>INTENT:</b> To reduce the disturbance of construction works on the site's natural topography and nearby waterways.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.3.1</b> Conduct thorough site analysis prior to planning and design to identify:</p> <ul style="list-style-type: none"> <li>• areas of prime ecological significance;</li> <li>• areas where clearing and/or major earthworks should specifically not occur;</li> <li>• potential soil issues (e.g. dispersive soils); and</li> <li>• the suitability of the site for earthworks and construction.</li> </ul> <p>The project must adequately consider and preserve significant areas based on the advice of this report.</p>	Site analysis outlining areas which require protection.
<p><b>1.3.2</b> The project is planned, designed and constructed in manner that achieves a balanced earthworks outcome (no spoil or import). Where spoil is generated it shall be disposed of in a location requiring import and not to landfill.</p> <p><b>Note:</b> Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.</p>	Statement from engineer.
<p><b>1.3.3</b> Plan, implement and maintain effective erosion and sediment control measures during construction and operation. As a minimum, these should exceed relevant Federal, State and Local legislative and regulatory requirements.</p>	Erosion and sediment control plan/soil and water management plan, staging plan and <i>statement of compliance</i> from an <i>appropriately qualified professional</i> .
<p><b>1.3.4</b> Ensure appropriate staging of earthworks to ensure bare earthworks are avoided in high-risk areas of the site during dominant rainfall periods, and the area and duration of bare earthworks is minimised during construction.</p>	Statement from engineer.
<p><b>1.3.5</b> Design and construct street layout to fit with topography with minimal disruption.</p> <p><b>Note:</b> The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.</p>	Pre and post civil contour maps.
<p><b>1.3.6</b> Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.</p>	Contamination report and details on remediation actions.

Criteria	Required Supporting Documentation
<h2>1.4 URBAN ECOLOGY</h2> <p><b>INTENT:</b> 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.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>1.4.1</b> 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.</p>	Statement from registered landscape architect/horticulturalist.
<p><b>1.4.2</b> Reduce urban heat island effect. This could be through:</p> <ul style="list-style-type: none"> <li>• reduction of hardstand areas;</li> <li>• consideration of roof reflectiveness, material and area;</li> <li>• utilisation of different materials for construction(e.g. open-grid pavement);</li> <li>• incorporation of breezeways and greenways;</li> <li>• provision of shading to roads, footpaths and bicycle paths;</li> <li>• maximising vegetative cover; and/or</li> <li>• green (vegetated) or shaded surfaces.</li> </ul>	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.
<p><b>REQUIREMENT:</b> Achieve at least SIX credits from the following options:</p>	
<p><b>1.4.3</b> Locate on a <i>brownfield site</i> or site that had been <i>significantly modified</i> from its natural state and had little or limited existing ecological value.</p> <p><b>1 credit</b> – ≤75% of the site area has been <i>significantly modified</i>.  <b>2 credits</b> – &gt;75% of the site area has been <i>significantly modified</i>.  <b>3 credits</b> – <i>brownfield site</i>.</p>	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.
<p><b>1.4.4</b> The project is a refurbishment (<b>2 credits</b>).</p>	Details of existing use and pre and post refurbishment building envelope.
<p><b>1.4.5</b> More than 90% of all plant species introduced to the site for landscaping <i>public spaces</i>, or for landscaping private areas prior to sale are <i>locally native</i>. 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.</p> <p><b>Note:</b> In relevant climates, species selected specifically to allow solar access are excluded from the 90% requirement.</p>	Landscape palette and statement from registered landscape architect.
<p><b>1.4.6</b> Include green roofs or green walls, incorporating native plants species, into the project. Species selection should be informed by an <i>appropriately qualified professional</i> and should be designed to improve ecological function. A maintenance plan and non-potable irrigation supply should also be in place.</p>	Details on size, location and featured species. Statement from registered landscape architect and/or ecologist regarding how the green wall/roof will improve ecological function.
<p><b>1.4.7</b> Incorporate community and productive gardens in the project including space for garden plots, communal or individual vegetable gardens.</p>	Details on the location, maintenance and management of the community/productive gardens.
<p><b>1.4.8</b> Demonstrate that the planting palette for the project contains a mix of fast and slow growing species.</p>	Statement from registered landscape architect.
<p><b>1.4.9</b> Minimise noise pollution during and post construction.</p>	Construction management plan.



Criteria	Required Supporting Documentation
<p><b>1.4.10</b> Demonstrate appropriate consideration of viable planting spaces by:</p> <ul style="list-style-type: none"> <li>• utilising appropriate media with low organic content (5% or less);</li> <li>• utilise appropriate species for planting which address functionality requirements; and</li> <li>• demonstrate appropriate consideration of soil depths for the proposed or existing plantings.</li> </ul>	Statement from registered landscape architect.
<p><b>1.4.11</b> A minimum of 10% (or greater than regulatory standard) of the site is allocated for <i>deep planting</i>.</p>	Statement from registered landscape architect.
<p><b>1.4.12</b> Contribute green space significantly in excess of the local government requirements for green space.</p> <p><b>Credits</b> are to be allocated pro-rata for each 20% in excess of local government requirements and <b>5 credits</b> for 100% in excess of local government requirements. This is capped at a maximum of <b>5 credits</b>. Stringent protective measures to secure the use of private land for open space and flora and fauna purposes may also be applicable and contribute to the green space calculations for EnviroDevelopment purposes (however, if the longevity of such measures is likely to be less than through other means there may need to be a discount factor used in the calculations).</p> <p><b>Note:</b> Credits can be claimed if evidence is provided of off-site land holdings, however this land holding can only be claimed once and must have nature conservation value.</p>	When claiming credits under this category, a <i>statement of compliance</i> must be provided regarding the ongoing ownership and maintenance arrangements (in the form of an approved management plan) for this land to provide certainty about the longevity of its maintenance as green space.

# Health and Aged Care – Waste

To achieve certification in the Waste element, a *project* must achieve:

- 2.1.1 under Essential Action (2.1);
- **all** of the requirements under Pre-Construction, Civil Works and Construction Phase (2.2); and
- 2.3.1 under Post-Construction Phase (2.3).

## Criteria

## Required Supporting Documentation

### 2.1 ESSENTIAL ACTION

**INTENT:** To ensure there is a clear strategy which facilitates the recycling of resources and reduces waste going to landfill.

**REQUIREMENT:** Achieve the following:

**2.1.1** Identify the local recyclers, secondary product manufacturers and material streams available to the site to be used in the pre-construction and construction phase. Provide reasoning for the selection of the appropriate rationale for waste management. Information provided under this criterion will be used, in tandem with criteria-specific statements and documentation, to assess the project's performance under 2.2 and 2.3.

**Note:** *Non-metropolitan* sites may apply for special consideration under specific sections within this element where recycling facilities are not nearby.

Map highlighting relevant facilities and clear evidence of amount of materials flowing through to offsite facilities. *Statement of compliance* from developer or sustainability consultant providing reasoning for the site-specific waste rationale. Details of off site recycling agreements, including licence/approval details of the facility.

### 2.2 PRE-CONSTRUCTION, CIVIL WORKS AND CONSTRUCTION PHASE

**INTENT:** To ensure there is a clear strategy which supports the waste hierarchy of reduce, reuse and recycle and reduces the quantity of waste going to landfill.

**REQUIREMENT:** Achieve EACH of the following:

**2.2.1** The contractor implements a comprehensive, project-specific, waste management plan for the works. At a minimum, the waste management plan should include the following:

- waste generation;
- waste systems;
- minimisation strategy;
- performance/reduction targets;
- bin quantity and size;
- collection frequency;
- waste contractors;
- waste management facilities shown on plans;
- signage; and
- monitoring and reporting including frequency and method.

**2.2.2** Recycle or reuse a minimum of 60% (by volume) of demolition, land clearing and civil works materials/products (including vegetative debris) on site. In the event that demolition, land clearing or civil works materials cannot be recycled on site, full details of the operators to be engaged (including all licences they hold to operate) and materials streams to be recovered as part of the off site activity must be provided.

**Note:**

- (i) Hazardous materials (e.g. asbestos, contaminated soil) are excluded.
- (ii) If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.

Site waste management plan endorsed by the developer, with further statements from the engineer as appropriate. The plan must address each of the requirements for the pre-construction and construction phases.

Details of existing materials on site and arrangements and estimates of waste streams and generation.



Criteria	Required Supporting Documentation
<p><b>2.2.3</b> Recycle or reuse at least 60% of all built form construction waste (by volume).</p> <p><b>2.2.4</b> Manage and dispose/treat all hazardous substances, pollutants and contaminants in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p>	<p>Evidence of a waste management plan. Quarterly reports, including waste records should be kept for compliance purposes.</p> <p>Details of any on site treatment processes for hazardous substances, pollutants, contaminants or acid sulphate soils must be provided and such processes must be supported by approved State Agency requirements and laws.</p>
<h2>2.3 POST-CONSTRUCTION PHASE</h2> <p><b>INTENT:</b> To provide recycling opportunities and facilities for end users to reduce waste going to landfill.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>2.3.1</b> Provide separate facilities for recycling at each level and provide separate recycling facilities in common areas and kitchens.</p>	<p>Evidence in plans and statement from architect or building designer.</p>



# Health and Aged Care – Energy

To achieve certification in the Energy element, a *project* must achieve:

- **all** of the requirements under Climate Responsive Design (3.1);
- **all** of the requirements under Daylighting (3.2);
- 3.2.1 under Submetering (3.3);
- **all** the requirements under Lighting (3.4);
- 3.5.1 and **one** credit from 3.5.2-3.5.4 under HVAC (3.5);
- if the project includes any total enclosed or semi-enclosed carparks, **all** of the requirements under Carparks (3.6);
- if the project includes any lift systems, 3.7.1 under Lift Systems (3.7);
- 3.8.1 under Reduction in Greenhouse Gas Emissions (3.8); and
- if the project includes any *communal uses*, meet **all** of the requirements under Communal Uses (3.9).

## Criteria

## Required Supporting Documentation

### 3.1 CLIMATE RESPONSIVE DESIGN

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

**REQUIREMENT:** Achieve EACH of the following:

**3.1.1** The project must be orientated to demonstrate positive passive design outcomes are maximised.

Provide evidence that building orientation, including the positioning of fenestration/access points, and associated outdoor areas (as appropriate) have been/will be designed to encourage ideal solar orientation. This may include a site analysis of local climatic data (average monthly temperatures, humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), overshadowing, glare and privacy.

**3.1.2** The project is designed to minimise extremities in temperatures, including negative microclimatic factors.

Statement from planner/architect/designer/engineer with reference to specific examples.

**3.1.3** The design of *public spaces* optimises microclimatic conditions at all times of the year.

Statement from planner/architect/designer/engineer with reference to specific examples.

### 3.2 DAYLIGHTING

**INTENT:** To ensure buildings provide good levels of daylight to reduce energy usage and provide psychological benefits to occupants.

**REQUIREMENT:** Achieve EACH of the following:

**3.2.1** Demonstrate how the design has considered and incorporated natural daylight into the project. This may include, but is not limited to:

- light reflecting surfaces/colours to enhance the distribution of light to internal spaces.
- provision of daylighting devices that provide natural daylight or diffused light to internalised spaces (e.g. clerestories, skylights or roof lights etc.)
- zoning of spaces so that those spaces that benefit from natural light are located near sources of light.

Statement from architect/designer.

**3.2.2** Glare from daylight is reduced across the nominated area through any combination of the below:

- fixed shading devices shade the working plane, 1.5m in from the centre of the glazing, from direct sun at desk height (720mm *AFFL*) for 80% of standard occupancy hours;
- where blinds or screens are fitted on all glazing and atriums as a base building provision; and/or
- perimeter lighting.

Statement from architect/designer.



Criteria	Required Supporting Documentation
<b>3.3 SUBMETERING</b> <b>INTENT:</b> To ensure each occupant has the opportunity to monitor and manage energy usage. <b>REQUIREMENT:</b> Achieve the following:	
<b>3.3.1</b> Each individual tenancy is sub-metered.	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<b>3.4 LIGHTING</b> <b>INTENT:</b> To increase the energy efficiency of lighting throughout the project. <b>REQUIREMENT:</b> Achieve EACH of the following:	
<b>3.4.1</b> Provide efficient lighting in common areas, (e.g. street lighting, public spaces), such as through utilising solar power, fluorescent or LED fittings.	Evidence in masterplan or electrical plans with <i>statement of compliance</i> from engineer or developer.
<b>3.4.2</b> Automated lighting control, including occupant detection and daylight adjustment is provided.	Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.
<b>3.5 HVAC</b> <b>INTENT:</b> To increase the energy efficiency of HVAC systems throughout the project. <b>REQUIREMENT:</b> Achieve the following:	
<b>3.5.1</b> Demonstrate how the design has considered and incorporated natural breezes, cross ventilation, thermal mass and other design elements relevant to the climate zone into the project to reduce the need for artificial heating and cooling.	Evidence in plans with statement from architect.
<b>REQUIREMENT:</b> Achieve at least ONE credit from the following options:	
<b>3.5.2</b> The HVAC system in each separate enclosed space within the nominated area is designed to be automatically shut down when not in use.	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<b>3.5.3</b> The HVAC system is designed to allow a wider temperature control band when not in use, minimum of an additional two degrees in each direction is required.	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<b>3.5.4</b> Install carbon dioxide monitoring devices to single HVAC systems which have a capacity over 20kW.	Evidence in electrical plans with <i>statement of compliance</i> from mechanical engineer.
<b>3.6 CARPARKS</b> <b>INTENT:</b> To reduce the energy usage associated with ventilating carparks within buildings. <b>REQUIREMENT:</b> Achieve EACH of the following:	
<b>3.6.1</b> Install carbon monoxide monitoring/controls to carpark exhaust systems.	Evidence in electrical plans with <i>statement of compliance</i> from engineer.
<b>3.6.2</b> 25% of the total enclosed/semi-enclosed carpark by area is naturally ventilated, or 50% of the total enclosed/semi-enclosed carpark has either passive supply or passive exhaust.	Statement from engineer and evidence in plans.

Criteria	Required Supporting Documentation
<h3>3.7 LIFT SYSTEMS</h3> <p><b>INTENT:</b> To reduce the energy usage of lift systems within buildings.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.7.1</b> Where lifts are installed in the project, demonstrate consideration of lift power systems that are energy efficient and environmentally friendly. This includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• use of regenerative drives;</li> <li>• machine room-less elevators;</li> <li>• dispatch control systems;</li> <li>• intelligent automation; and/or</li> <li>• stand-by modes.</li> </ul>	<p>Evidence in electrical plans with <i>statement of compliance</i> from engineer or developer.</p>
<h3>3.8 REDUCTION IN GREENHOUSE GAS EMISSIONS</h3> <p><b>INTENT:</b> To reduce greenhouse gas emissions within the project.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>3.8.1</b> Reduce greenhouse gas emissions within the project by at least 20% more than required under relevant Federal and State government regulatory means.</p> <p>This could be achieved through:</p> <ul style="list-style-type: none"> <li>• alternative energy sources (e.g. solar power or other non-polluting, renewable power source);</li> <li>• energy efficient appliances and fixtures;</li> <li>• reduction through design; and/or</li> <li>• demand/behavioural management.</li> </ul>	<p>Statement from engineer showing the energy requirements of the project and the energy savings compared to regulatory requirements (i.e. calculations on the energy balance).</p>
<h3>3.9 COMMUNAL USES</h3> <p><b>INTENT:</b> To reduce energy usage in <i>communal uses</i>.</p> <p><b>REQUIREMENT:</b> Where the project includes <i>communal uses</i>, achieve EACH of the following:</p>	
<p><b>3.9.1</b> Where swimming pools are installed in the project, demonstrate consideration of pump systems that are energy efficient and environmentally friendly. This includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• variable speed control;</li> <li>• variable-frequency drives; or</li> <li>• variable-speed pumps</li> </ul>	<p>Statement from developer.</p>
<p><b>3.9.2</b> In <i>community facilities</i> utilise (where relevant):</p> <ul style="list-style-type: none"> <li>• energy efficient lighting (e.g. LED or Compact Fluorescent Lamp); and</li> <li>• dishwashers with an energy consumption of <math>\leq 245\text{kWh}</math> per annum;</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• provision of solar power (or other non-polluting, renewable power source).</li> </ul>	<p>Statement from engineer and relevant plans.</p>



## Health and Aged Care – Materials

To achieve certification in the Materials element, a *project* must achieve:

- **three** requirements from the ‘Civil Works’ (4.1.1–4.1.4) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1);
- **three** requirements from the ‘Built Form’ (4.1.5–4.1.8) across the entire project or meet 4.1.9 under Environmentally Responsible Materials (4.1); and
- **two** credits from 4.2.1–4.2.5 under Emissions (4.2).

### Criteria

### Required Supporting Documentation

## 4.1 ENVIRONMENTALLY RESPONSIBLE MATERIALS

**INTENT:** To promote the use of environmentally responsible materials in the project.

### CIVIL WORKS

#### 4.1.1 Roads

Statement from supplier and supporting technical information.

95% of constructed roads use one or more of the following materials:

- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate;
- asphalt which contains at least 10% reclaimed asphalt pavement (RAP) content (or the maximum allowable RAP content for the application);
- warm mix asphalt replacing 40% by weight of hot mix asphalt; and/or
- recycled materials used for road base or sub-base.

#### 4.1.2 Services

Statement from quantity surveyor and/or supplier and supporting technical information.

Services use one or more of the following materials:

- 25% of the total cost of PVC content is reduced through replacement with alternative materials;
- PVC content is sourced from an ISO 14001 certified supplier;
- concrete pipes with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate; and/or
- recycled plastic piping.

#### 4.1.3 Hard Landscaping

Statement from supplier and supporting technical information.

Hard landscape materials use one or more of the following materials:

- reused or salvaged materials;
- materials which have a recycled content (e.g. park furniture made from recycled plastic); and/or
- concrete with  $\geq 30\%$  supplementary cement materials or  $\geq 30\%$  of recycled aggregate.

#### 4.1.4 Soft Landscaping

Statement from landscape architect, including details of quantities, uses and attributes.

Throughout the project:

- any vegetative debris from the site is mulched and reused; and
- any non-contaminated topsoil is stockpiled and reused within the site.

Criteria	Required Supporting Documentation
<b>BUILT FORM</b>	
<p><b>4.1.5 Structure</b></p> <p>The structure of the built form (both above and below ground) uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) concrete with <math>\geq 30\%</math> supplementary cementitious materials or <math>\geq 30\%</math> of recycled aggregate;  <b>Note:</b> Where structural integrity is an issue, the percentage should reflect the highest allowable replacement to be incorporated.</li> <li>(b) steel with a recycled content <math>\geq 15\%</math>;</li> <li>(c) pre-cast panels with <math>\geq 15\%</math> supplementary cement materials;</li> <li>(d) structural timber which is <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) accredited;</li> <li>(e) bricks containing a recycled content of at least 25%; and/or</li> <li>(f) reused materials are utilised for <math>\geq 30\%</math> of the structure.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.6 Envelope/Linings</b></p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> <li>(a) timber window frames which are <i>AFS</i> or <i>FSC</i> accredited;</li> <li>(b) aluminium windows which contain <math>\geq 20\%</math> recycled aluminium or glass by mass;</li> <li>(c) plasterboard consists of <math>\geq 10\%</math> recycled gypsum; and/or</li> <li>(d) plasterboard consists of recycled paper.</li> </ul>	Statement from supplier and supporting technical information.
<p><b>4.1.7 Services</b></p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> <li>(a) 25% of the total cost of PVC content is reduced through replacement with alternative materials;</li> <li>(b) PVC content is sourced from an ISO 14001 certified supplier; and/or</li> <li>(c) alternative products are used in preference to sheet metal.</li> </ul>	Statement from quantity surveyor and/or supplier and supporting technical information.
<p><b>4.1.8 Furniture, Fixtures, Equipment &amp; Finishes</b></p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> <li>(a) underlay consists of 95% recycled product;</li> <li>(b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme;</li> <li>(c) joinery is <i>FSC</i> certified;</li> <li>(d) materials which have a recycled content of <math>\geq 60\%</math>; and/or</li> <li>(e) avoid the use of composite wood products.</li> </ul>	Statement from supplier and supporting technical information.



Criteria	Required Supporting Documentation
<b>ALTERNATIVE COMPLIANCE</b>	
<p><b>4.1.9</b> Use a lifecycle analysis approach to quantify the environmental performance of materials selected for the project. At a minimum, the lifecycle assessment(s) should be in accordance with:</p> <ul style="list-style-type: none"> <li>• ISO 14044 and with the <i>Building Products Innovation Council's Lifecycle Inventory Data Protocol</i> and demonstrate a 20% weighted improvement against standard practice in environmental performance; or</li> <li>• ISO 14044 and EN15978 and demonstrate a 20% improvement in environmental performance in Global Warming Potential and three other environmental impact categories against standard practice, expressed in impacts per functional unit. As required by the standards, the functional unit should reflect the core purpose of the development (kgCO<sub>2</sub>e/gross building area/year).</li> </ul> <p><b>Alternatively, a lifecycle assessment in accordance with the above conditions can be provided in lieu of any of the options outlined under 4.1.1 - 4.1.8.</b></p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the project.</p>
<b>4.2 EMISSIONS</b>	
<p><b>INTENT:</b> To increase the use of finishes and products which minimise the levels of emissions in buildings.</p> <p><b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:</p>	
<p><b>4.2.1</b> Use <i>low emission paints</i> on ≥95% of internal and external painted surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.2</b> Use <i>low emission sealants</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.3</b> Use <i>low emission adhesives</i> on ≥95% of internal and external surfaces.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.4</b> Use <i>low emission floor coverings</i> on ≥95% indoor covered floors.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>
<p><b>4.2.5</b> All engineered wood products (including exposed and concealed applications) are E0 rated.</p>	<p>Statement from developer and architect and/or interior decorator as applicable, stating how this requirement has been met. Details including product name, number and data sheet should also be provided.</p>



# Health and Aged Care – Water

To achieve certification in the Water element, a *project* must achieve:

- 5.1.1 under Reduction in Potable Water Demand (5.1);
- 5.2.1 under Submetering (5.2);
- **all** of the requirements under Irrigation Requirements (5.3); and
- if the project includes any *communal uses*, **all** of the requirements under Communal Uses (5.4).

## Criteria

## Required Supporting Documentation

### 5.1 REDUCTION IN POTABLE WATER DEMAND

**INTENT:** To reduce *potable water* consumption within buildings.

**REQUIREMENT:** Achieve the following:

**5.1.1** Reduce *potable water* usage within the project (excluding common area irrigation requirements captured in 5.3.1) by at least 20% more than required under relevant Federal and State government regulatory means.

This may be achieved by any or a combination of the following means:

- stormwater harvesting;
- plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);
- greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);
- rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or
- water use efficiency (e.g. fittings with a higher WELS rating than mandated through regulation, rainwater tanks with larger capacity than mandated).

Certification by engineer or local government engineer or development assessment officer or other appropriately qualified professional (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient stormwater will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)

Worked calculations showing how initiatives will achieve at least 20% reduced potable water usage compared to regulatory requirements.

### 5.2 SUBMETERING

**INTENT:** To ensure each occupant has the opportunity to monitor and manage water usage.

**REQUIREMENT:** Achieve the following:

**5.2.1** Utilise smart metering systems to allow monitoring of water consumption. Smart metering system should include features such as leak detection and submetering of key uses.

Evidence in plans with *statement of compliance* from engineer or developer.



## Criteria

## Required Supporting Documentation

### 5.3 IRRIGATION REQUIREMENTS

**INTENT:** To reduce the use of *potable water* for irrigation purposes in the public realm.

**REQUIREMENT:** Achieve EACH of the following:

**5.3.1** Use drought tolerant species which have no irrigation requirements for the public realm.

Where irrigation is required either for watering beyond the establishment period, water should be supplemented from a non-potable source including through:

- stormwater harvesting (e.g. broad scale collection of stormwater runoff for use in irrigation);
- plumbing of recycled water reticulation (such as dual reticulation facilitating the reuse of treated effluent water);
- greywater reuse (e.g. plumbing to facilitate reuse of greywater on lot);
- rainwater harvesting (e.g. collection of rainwater in tanks from roof runoff); and/or
- use of underground water sources.

**Note:** the following exemptions may apply:

- *potable water* used during the establishment phase (maximum establishment phase is considered three years for trees, two years for shrubs and one year for herbaceous cover); and
- *potable water* used to irrigate non-commercial food production gardens.

**5.3.2** Demonstrate that irrigation will be delivered via the most efficient system for that situation. Water should be directly applied to the vegetation to limit evaporation, runoff or wastage. Mulch must be applied to planted areas and maintained.

**5.3.3** Where sandy or clay soils are present in the public realm, soil is ameliorated to increase the effectiveness and efficiency of irrigation.

**5.3.4** Mulch (at a minimum depth of 75mm) is applied to planted areas and maintained.

Landscape palette and statement from landscape architect.

Certification by engineer or local government engineer or development assessment officer or other *appropriately qualified professional* (e.g. through water balance calculations and hydrological modelling and a statement) that sufficient non-potable water will be available and that the civil works will be constructed in such a way as to facilitate its harvest and use. (Such infrastructure should be constructed as part of the civil works.)

If using an underground water source, certification of bore licence and capacity should be provided. Must also show proof of recharge (by hydrogeologist) and water balance calculations to show that there will be no net drain to aquifer. Where irrigation is sourced from a recycled water or grey water supply, a soil management plan must be provided.

Irrigation plan or statement from landscape architect regarding irrigation methods.

Statement from registered landscape architect.

Statement from registered landscape architect.

### 5.4 COMMUNAL USES

**INTENT:** To reduce *potable water* usage in *communal uses*.

**REQUIREMENT:** Where the project includes *communal uses* achieve EACH of the following:

**5.4.1** Where an outdoor swimming pool is included within the project, a pool blanket is included.

Statement from developer.

**5.4.2** Where a swimming pool is included within the project, ensure there is a backwash minimisation system in place (e.g. cartridge filter, filter utilising cyclone technology, oversized sand filter, centrifugal/pre-filter device, backwash recycling system or similar).

Statement from developer.

**5.4.3** In *community facilities* utilise (where relevant):

- waterless urinals;
- taps with water usage of ≤6 litres per minute; and
- dishwashers with a water consumption of ≤14 litres per use.

Statement from engineer and relevant plans.

OR

- connect to a non-potable water source for indoor non-drinking water uses.

# Health and Aged Care – 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)
  - Local Facilities (6.6)

## Criteria

## Required Supporting Documentation

### 6.1 ESSENTIAL ACTIONS

**REQUIREMENT:** Achieve EACH of the following:

**6.1.1** Demonstrate that the project is driven by a clear vision, with defined environmental, economic, social sustainability and liveability goals including measurable performance targets.

Evidence of project vision and goals with corresponding measurable performance targets.

**6.1.2** Demonstrate how the project has been designed to encourage a safe environment, reduce crime and encourage positive interaction between patients/visitors/employees and other local people using the area, according to Crime Prevention Through Environmental Design (CPTED).

Evidence in plans, and statement from planner.

### 6.2 COMMUNITY CONSULTATION, PLANNING AND DEVELOPMENT

**INTENT:** To proactively and meaningfully engage in effective and informed consultation with the local community.

**REQUIREMENT:** Achieve EACH of the following:

**6.2.1** Demonstrate efforts to engage with stakeholders who may have an interest in the project through the preparation of a guiding strategy which outlines a schedule of activities and measurable outcomes.

Consultation/stakeholder engagement strategy.

**6.2.2** Document evidence that comprehensive community feedback has been actively sought and considered, and incorporated where feasible and appropriate.

Concise report outlining methods and results of research on local community needs and wishes and how they have been considered in the project. Report should also include a schedule of submissions.

**6.2.3** Consider and appropriately conserve and/or recognise and respect indigenous and post-European cultural heritage. Cultural heritage investigations should be conducted in accordance with the minimum standards outlined in the Burra Charter (1999) using the services of appropriately qualified professionals.

Evidence of recognition and protection or considerate reuse of cultural heritage sites or structures (and artefacts) if applicable and in keeping with advice from traditional owners, long-term locals or historical advisors.

This could include:

- evidence of voluntary liaison with traditional owner, if such a group can be identified, and the consideration of Indigenous cultural values in the processes, design and construction of the project; and
- evidence of consideration of significant post European cultural heritage, such as retaining significant trees, fences, old machinery and structures of significance, interpretive signage, research of site history and publication, promotion and incorporation in the design and naming of elements.

### 6.3 EFFICIENT AND ACCESSIBLE TRANSPORT

**INTENT:** To reduce reliance on private cars as the primary mode of transport.

**REQUIREMENT:** Achieve the following:

**6.3.1** Demonstrate encouragement of active transport options amongst the community.

Details of programs including timeframes.



Criteria	Required Supporting Documentation
<b>REQUIREMENT:</b> Achieve at least TWO credits from the following options:	
<p><b>6.3.2 Bicycles</b> Cyclist facilities are provided for 5% of building staff. End of trip facilities must be provided in excess of State and Local government requirements. If no current State or Local government policy exists on this topic, compliance with Queensland Transport's End-of-Trip Facilities for Bicycle Riders Guide will be expected.</p>	Evidence in plans, and statement from masterplanner and developer stating how the requirements have been met.
<p><b>6.3.3 Pathways</b> Provide connecting, safe, attractive and well-lit pathways running wholly in public spaces (including streets and open spaces), directly connecting residential and commercial areas to local facilities and providing links between areas. Paths should have some areas of adjacent shade, shelter, seating and water fountains and connect with paths in neighbouring areas. Way-finding signage should also be provided for other destinations and focal points.</p>	Evidence in plans, and statement from landscape architect, developer and engineer stating how the requirements have been met.
<p><b>6.3.4 Active Transport Linkages</b> Provide shared pathways for both walking and cycling. The width of the pathway should be a minimum of 3m and designed appropriately for the anticipated level of pedestrian and bicycle use, and the likely speed of cyclists and the required clearances. OR Provide pathways on both sides of all roads within the project.</p>	Evidence in plans and/or statement on how the requirements have been met.
<p><b>6.3.5 Public Transport</b> Demonstrate access to public transport, such that 75% of dwellings are within:</p> <ul style="list-style-type: none"> <li>• 400m walking distance of a bus stop;</li> <li>• 800m walking distance from a railway station or <i>line haul station</i>; and/or</li> <li>• 1,200m walking distance from a <i>line haul station</i> located within a town centre.</li> </ul> <p>The stop/station must be serviced by at least ten services per weekday (by the time the buildings within the project are 50% occupied) to local facilities or other service centres or connecting transport systems. Legible direction signage to public transport stops is provided at key locations.</p>	<p>Evidence of existing transport location/s and frequency of service. If public transport stop is proposed, details of proposal to local government and negotiations to date should be provided.</p> <p>Evidence including arrangements and frequency.</p> <p>Evidence including distribution and eligibility.</p>
<p><b>6.3.6 Shared Transport</b> Provide a shared transport system to cater for transport needs such as for those employees involved in shift work.</p>	Evidence including the location, arrangements and provider of scheme.
<p><b>6.3.7 Low-Emitting and Fuel-Efficient Vehicles</b> Provide parking for low-emitting and fuel-efficient vehicles at all <i>community facilities</i> and retail/commercial businesses within the project for 5% of the total vehicle parking capacity of each site.</p>	Evidence including the location and number of parks.

Criteria	Required Supporting Documentation
<h2>6.4 ENGAGING AND INCLUSIVE PUBLIC REALM</h2> <p><b>INTENT:</b> To ensure the delivery of high quality public realm which provides an attractive, inclusive, non-discriminatory and safe environment for the community to meet, engage and recreate.</p> <p><b>REQUIREMENT:</b> Achieve EACH of the following:</p>	
<p><b>6.4.1</b> At least two designated places of respite with direct physical connection to the natural environment which:</p> <ul style="list-style-type: none"> <li>are a minimum size each of 25m<sup>2</sup>;</li> <li>are universally accessible and well lit;</li> <li>are located to avoid noise, odour and air pollution;</li> <li>at least one is designated as a staff only area;</li> <li>a minimum of 30% of the area of the place of respite is soft landscaping;</li> <li>including seating;</li> <li>include a shaded area; and/or</li> <li>are screened from prevailing winds.</li> </ul>	<p>Evidence in plans and statement from landscape architect and/or architect.</p>
<h2>6.5 COMMUNITY PROSPERITY</h2> <p><b>INTENT:</b> To ensure that the project makes a contribution to the local economy in which it sits, having regard to enhancing the number and range of employment opportunities.</p> <p><b>REQUIREMENT:</b> Achieve the following:</p>	
<p><b>6.5.1</b> Develop a community economic/employment strategy with measurable outcomes which identifies:</p> <ul style="list-style-type: none"> <li>economic goals and priorities for the community;</li> <li>employment targets and the job balance ratio;</li> <li>activities to be provided within the project (e.g. retail, industrial, commercial or community based);</li> <li>socio-economic profile of the host local government area (based on at least the last two census);</li> </ul> <p><b>Note:</b> where there have been local government amalgamations, define using a similar area.</p> <ul style="list-style-type: none"> <li>how the project will contribute to the host local government area's socio-economic profile; and</li> <li>net percentage increase in the number of jobs in the local area where the project replaces productive uses (e.g. redevelopment of an industrial area).</li> </ul>	<p><i>Statement of compliance</i> from developer and evidence of community economic/employment strategy and implementation plan.</p>



Criteria	Required Supporting Documentation
<b>6.6 LOCAL FACILITIES</b> <b>INTENT:</b> To provide integrated projects which meet the needs of employees of the site and reduce the number of private car trips required. <b>REQUIREMENT:</b> Locate near (such that 75% of residences/workplaces are within 1km by foot) or provide within two years of the first occupancy at least FIVE of the following local services. <b>Note:</b> Local facilities should be co-located near public transport stops and pathways.	
<b>6.6.1</b> Newsagent <b>6.6.2</b> Grocery/corner store <b>6.6.3</b> Kindergarten, preschool, or childcare <b>6.6.4</b> Specialty stores <b>6.6.5</b> Cafes and/or restaurants <b>6.6.6</b> Community centre <b>6.6.7</b> Public transport hub <b>6.6.8</b> Bank or cash machine <b>6.6.9</b> Post office <b>6.6.10</b> Educational facility or material (e.g. interpretive signage)	Evidence in plans, including walking distances.



# Glossary

**Affordable** in the context of residential property means:

- (a) the average weekly rent payable by occupiers for a residence in the local region is equal to or less than 30% of the median household income for the local region; and
- (b) the average weekly home loan repayment payable by owner occupiers for a residence in the local region is equal to or less than 30% of the median household income for the local region where weekly mortgage repayments are calculated on the basis that the initial loan was for an amount equal to 90% of the purchase price for a term of 30 years and the interest rate is equivalent to the standard variable home loan rate charged by the project developer's financial institution.

**AFFL** means above finished floor level.

**AFS** means Australian Forestry Standard.

**Appropriately qualified professional** means a person or persons with tertiary qualifications or equivalent in the relevant area to the satisfaction of the EnviroDevelopment Board of Management.

**ARI** means average recurrence interval; the average or expected value of the periods between exceedances of a given rainfall total accumulated over a given duration.

**Brownfield site** means land within an urban area, which at the time of purchase, a minimum of 50% of the site had been previously built on.

**Building Code of Australia** means Volumes One and Two of the National Construction Code, being the set of technical provisions for the design and construction of buildings and other structures, produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government and State and Territory Governments.

**Building Products Innovation Council** means the national body representing Australia's building product associations and developer of the Building Products Life Cycle Inventory.

**Building Products Lifecycle Inventory Data Protocol** means the method and database developed by the Building Products Innovation Council for life cycle assessment of building products.

**Climatic zones** means those defined as per the Building Code of Australia.

**Communal uses** means facilities and spaces within a project that are designed and constructed for communal use by owners, occupiers, residents and employees (as applicable).

**Community Development Officer** means a person engaged to oversee a range of practices to service members of the community and increase liveability and social interaction.

**Community facilities** includes community halls, community centres, recreational clubs, parkland and other facilities designed and constructed for communal use by owners, occupiers, residents and employees (as applicable).

**COP** means coefficient of performance of air conditioning systems.

**CPTED** means the Crime Prevention Through Environmental Design strategy for the local government area or State (as applicable) in which the Project is located, being the strategy which outlines how physical environments can be designed in order to lessen the opportunity for crime. If a CPTED strategy is not in place for the local government area or State in which the *project* is located, then the CPTED strategy for Queensland will be the relevant document.

**Deep planting** means an area dedicated to the protection and establishment of significant landscape trees.

**Design guidelines** means an enforceable system of design and related principles whether operating under contract, deed, covenant, architectural and landscape code for body corporates or some other means satisfactory to the EnviroDevelopment Board of Management. The developer may be asked to demonstrate active design guideline enforcement.

**Project** means the development which is the subject of the application for EnviroDevelopment.

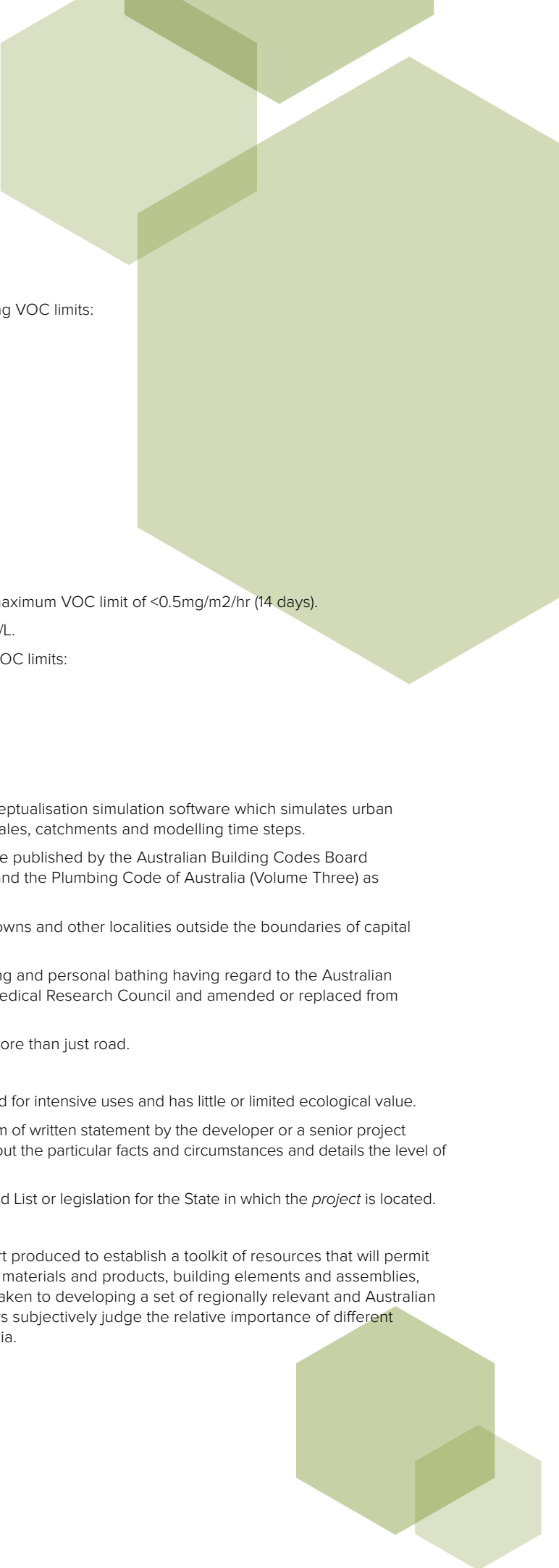
**EER** means the energy efficiency ratio relating to the performance of air conditioning systems.

**EPBC Act** means Environmental Protection and Biodiversity Act 1999, as amended or replaced from time to time.

**FSC** means Forest Stewardship Council.

**IUCN Redlist** means the index compiled by the International Union for Conservation of Nature to identify and document plant and animal species most in need of conservation attention if global extinction rates are to be reduced, as amended or replaced from time to time.

**Line haul station** means a public transport interchange located on a fixed line public transport corridor, such as heavy rail line, light rail line or busway.



**Locally native** means native plants which are endemic to the area.

**Low emission adhesives** means adhesives which meet the following VOC limits:

Indoor Carpet Adhesives <50g/L  
Carpet Pad Adhesives <50g/L  
Outdoor Carpet Adhesives <150g/L  
Wood Flooring Adhesive <100g/L  
Rubber Floor Adhesives <60g/L  
Subfloor Adhesives <50g/L  
Ceramic Tile Adhesives <65g/L  
VCT and Asphalt Tile Adhesives <50g/L  
Dry Wall and Panel Adhesives <50g/L  
Cove Base Adhesives <50g/L  
Multipurpose Construction Adhesives <70g/L  
Structural Glazing Adhesives <100g/L  
Single Ply Roof Membrane Adhesives <250g/L

**Low emission floor coverings** means floor coverings which have maximum VOC limit of <0.5mg/m<sup>2</sup>/hr (14 days).

**Low emission paints** means paints which have a VOC limit of <50g/L.

**Low emission sealants** means sealants which meet the following VOC limits:

Architectural <250g/L  
Marine Deck <760g/L  
Nonmembrane Roof <300g/L  
Roadway <250g/L  
Single-Ply Roof Membrane <450g/L  
Other <420g/L

**MUSIC** means the Model for Urban Stormwater Improvement Conceptualisation simulation software which simulates urban stormwater systems operating at a range of temporal and spatial scales, catchments and modelling time steps.

**National Construction Code** means the National Construction Code published by the Australian Building Codes Board comprising the Building Code of Australia (Volumes One and Two) and the Plumbing Code of Australia (Volume Three) as amended or replaced from time to time.

**Non-metropolitan sites** means projects that are located in areas, towns and other localities outside the boundaries of capital cities and major urban centres.

**Potable water** means water of a quality suitable for drinking, cooking and personal bathing having regard to the Australian Drinking Water Guidelines developed by the National Health and Medical Research Council and amended or replaced from time to time.

**Public spaces** means land that is publicly accessible but must be more than just road.

**RAP** means reclaimed asphalt pavement.

**Significantly modified** means land which has previously been utilised for intensive uses and has little or limited ecological value.

**Statement of compliance** means a statutory declaration or other form of written statement by the developer or a senior project representative engaged by the developer of the *project*, which sets out the particular facts and circumstances and details the level of compliance with the criteria.

**Threatened species** means as listed under the EPBC Act or IUCN Red List or legislation for the State in which the *project* is located.

**VOC** means volatile organic compounds.

**Weighting of Environmental Impacts in Australia** means the report produced to establish a toolkit of resources that will permit comprehensive Life Cycle Assessment of building and construction materials and products, building elements and assemblies, and whole buildings in Australia. The report outlines the approach taken to developing a set of regionally relevant and Australian average weighting factors, which reveal how Australian stakeholders subjectively judge the relative importance of different environmental impacts in different locations/climates around Australia.

# Technical Standards Taskforce

EnviroDevelopment would like to acknowledge the input from the following professionals involved during the Technical Standards Review Process:

## **National EnviroDevelopment Board of Management**

- Brent Thomas – Brown Consulting (National Chair)
- Lyndall Bryant – Queensland University of Technology
- James Coutts – Department of State Development, Infrastructure and Planning, Queensland Government
- Leanne Doxey – Cooper Grace Ward Lawyers
- Anna Maccheroni – AMEC
- Graham Marshall
- Sandy Vigar – Environmental Resources Management
- Nelson Wills – New Ground

## **Western Australia EnviroDevelopment Board of Management**

- Paul McQueen – Lavan Legal (Chair)
- Martin Anda – Xodus Energy (Chair of WA Energy Taskforce)
- Lex Barnett – Taylor Burnell Barnett
- Fiona Bentley – City of Wanneroo (Chair of WA Community Taskforce)
- Scott Bird – 360 Environmental (Chair of WA Water Taskforce)
- Martin Bowman – RPS Group (Chair of WA Ecosystems Taskforce)
- Ian Holloway – JWH Group (Chair of WA Materials Taskforce)
- Alf Lay – Australand Holdings (Chair of WA Waste Taskforce)

## **Victoria EnviroDevelopment Board of Management**

- Lyndsay Neilson – Neilson Associates Pty Ltd (Chair)
- Greg Aplin – Applied Urban Solutions
- Chris Chesterfield – Melbourne Water (Chair of Victorian Water Taskforce)
- Hisham Elkadi – Deakin University (Chair of Victorian Energy Taskforce)
- Alex Fernside – Yarra Energy Foundation (Chair of Victorian Waste Taskforce)
- Ray Green – University of Melbourne
- Julie Katz – The Planning Group (Chair of Victorian Community Taskforce)
- Charles Meredith – (Chair of Victorian Ecosystems Taskforce)

## **South Australia EnviroDevelopment Board of Management**

- David Martin – Finlaysons Lawyers (Chair)
- Kyra Reznikov – Finlaysons Lawyers
- Stephen Hains
- Ian Marker – Adelaide Development Company
- Rohan Hamden – Government of South Australia
- Kathryn Walker – Lynch Meyer Lawyers
- Charlie Condo – Boral
- Chris Marles – District Council of Mt Barker

## **New South Wales / Australian Capital Territory Steering Committee**

- Jenny Smithson – Cardno (Chair)
- Shane Brandtman – Mitchell Brandtman
- Matthew Easton – Tract Consultants
- Jane Fielding – Architectus

- Stuart Green – Brown Consulting
- Mary Haw – Cundall
- Brett Hawkins – McCullough Robertson
- Nigel Howard – Clarity Environment
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- John Maitland – Energy Architecture
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- Shona Mossman – FMG Engineering
- Cindy Oliver – Greenhill Engineers
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- Erica Walther – Australian Cultural Heritage Management (Community)
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- Mark Whalen – GHD (Water)
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- Rachel Evans – Emerge Associates (Water)
- Adele Gismondi – Water Corporation of Western Australia (Water)
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- Jason Hick – Emerge Associates (Ecosystems)
- Jake Hickey – Instant Waste Management (Waste, Materials)
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- Greg Ryan – LandCorp (Waste, Materials)
- Kate Saunders – Lend Lease (Community)
- Jey Shivakumar – 3E (Energy)
- Paul van der Moezel – PGV Environmental (Ecosystem)
- Stefan Wolmerans – Wave Engineering (Energy, Water)

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- Sheree Hughes and Rachelle Foreman – Heart Foundation
- Susan Thompson and Emily Mitchell – Healthy Built Environment Program, University of New South Wales
- Scott Paten – Healthy Waterways
- Alex Bruce – eTool

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- Francis Burke – Earthcare Consulting (Waste, Materials)
- Chris Carman – Benchmark Projects (Energy, Water)

## Notes

## Checklist



Legal advisor on Botanica South Brisbane  
development by Aria Property Group, an  
EnviroDevelopment certified project



## Exclusive legal sponsor and supporter of the EnviroDevelopment National Technical Standards

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