

National
Technical
Standards
Vol.3



enviro
development



partners

EnviroDevelopment would like to acknowledge the following partners.

National EnviroDevelopment Partners



HopgoodGanim Lawyers

HopgoodGanim recognises that environmentally sustainable development is at the heart of the work done by our clients in various sectors. Our extensive experience perfectly positions the firm as a partner of the EnviroDevelopment National Technical Standards, for the third consecutive period, and to continue to add strategic value to the sector.



RPS

RPS is a leading global professional services firm of 5,600 consultants and service providers. Located in 125 countries across all six continents we define, design and manage projects that create shared value to a complex, urbanising and resource-scarce world.

We work across six sectors: property, energy, transport, water, resources, defence and government services. Our services span twelve clusters: project and program management; design and development; water services; environment; advisory and management consulting; exploration and development; planning and approvals; health, safety and risk; oceans and coastal; laboratories; training and communication and creative services.



Melbourne Water

Melbourne Water supplies affordable, high-quality, reliable sewerage, healthy waterways, integrated drainage and flood management services and outstanding natural community spaces that help make Melbourne a fantastic place to live. Melbourne Water and committed to enhancing life and liveability for the greater Melbourne region. Our strategic direction outlines this vision in three areas: healthy people, healthy places and healthy environment.

Victoria EnviroDevelopment Partners





using this document

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

Development Type

Identifies the relevant development type and the relevant element.

Element

Identifies the relevant element.

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.

Criteria Sections and Technical Intent

Details the subject and intent of the element subsection.

Masterplanned Communities Ecosystems



Criteria	Required Supporting Documentation
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. 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.	Evidence in plans of topsoil stockpile location and management requirements.
1.2.3 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.	Construction management plan, identifying access locations.
1.2.4 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.	Statement from developer and registered landscape architect.
1.2.5 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.	Soil or landscape management plan.

1.3 EARTHWORKS

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

REQUIREMENT: Achieve EACH of the following:

1.3.1 Conduct thorough site analysis prior to planning and design to identify: <ul style="list-style-type: none"> • 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. The project must adequately consider and preserve significant areas based on the advice of this report.	Site analysis outlining areas which require protection.
1.3.2 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. Note: Projects which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.	Statement from engineer.
1.3.3 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.	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> .
1.3.4 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.	Statement from engineer.
1.3.5 Design and construct street layout to fit with topography with minimal disruption. Note: The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability /accessibility outcomes.	Pre and post civil contour maps.
1.3.6 Where there is contamination identified on site, employ best practice techniques to remediate contaminants to meet regulatory requirements and suit future uses.	Contamination report and details on remediation actions.

Development Type Colour Guide

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

what is enviro development?

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

EnviroDevelopment recognises 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 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 (UDIA) 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 periodically 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 experts across Australia 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.

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 users¹. Following certification, project teams receive a Marketing and Branding Guide and ongoing marketing support to optimise the value of EnviroDevelopment certification.



why enviro development?



Attract a premium for your project

Research conducted by UDIA has found that homebuyers would be willing to pay a premium to buy into an EnviroDevelopment and highly value sustainability initiatives. 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.



Offers 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. 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.



Ensure you have flexibility to innovate

The EnviroDevelopment tool is flexible to ensure it can be scaled across the many different development types. EnviroDevelopment can certify a project at any stage with clear and flexible direction on how to make the project more sustainable. EnviroDevelopment certifies against a set of holistic outcomes which are designed to encourage innovation. This flexibility allows projects to be creative in achieving sustainable outcomes.



the elements of envirodevelopment

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



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.



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.



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.



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.



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.



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.





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 and Application template.
- 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 National EnviroDevelopment Board of Management review.
- Access to EnviroDevelopment application advice.
- Access to EnviroDevelopment team to undertake application on behalf of submitter.

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.
- Certification fee payable.

6. 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.

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 16.
- To be recognised as a certified EnviroDevelopment, projects must meet at least four of the elements as part of a certification.
- 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 National 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 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 National 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); and
- supporting documentation that clearly demonstrates compliance and future delivery of initiatives to satisfy the EnviroDevelopment standards.

Costs Associated with EnviroDevelopment Certification

An EnviroDevelopment fee schedule is available from your local EnviroDevelopment Coordinator or by emailing 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 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 National 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 National 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 National 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 National 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 National 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 relevant legislative and regulatory requirements.

Further questions?

An EnviroDevelopment Coordinator is available to answer all queries on the certification process, and will provide timely and accurate advice. Contact details for local EnviroDevelopment Coordinators are available via the relevant UDIA state office or at **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.

become an enviro development **professional**

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.



Providing assistance in collating documentation for an EnviroDevelopment recertification.

A current directory of EnviroDevelopment Professionals is available on the EnviroDevelopment website. To register for training to become an EnviroDevelopment Professional, visit envirodevelopment.com.au.

enviro 
DEVELOPMENT™
PROFESSIONAL

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.



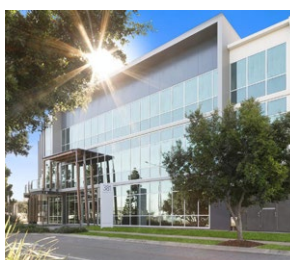
Industrial

Projects primarily used for industrial purposes.



Retail

Projects primarily used for retail purposes.



Commercial

Projects primarily used for commercial purposes.



Education

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



Health and Aged Care

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

essential requirements

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

- a.** 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.
- b.** 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.
- c.** Plan, implement, and maintain effective sediment and erosion control measures during construction and operation. As a minimum, these should comply with all regulatory requirements.
- d.** 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.
- e.** Demonstrate assessment of solar orientation options to provide best practice solar access opportunities.
- f.** Demonstrate how the project will reduce greenhouse gas emissions beyond regulatory requirements.
- g.** Demonstrate how the project will reduce potable water consumption for irrigation.
- h.** Demonstrate how community consultation and feedback has been incorporated into the project's design or activities.

Education

Project: USC Sippy Downs Campus

Developer: USC

Certification: 6 elements (ecosystems, waste, energy, materials, water and 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 1.4.3-1.4.15 under Urban Ecology (1.4).

INNOVATION

The following criteria details the requirements for certification of the Ecosystems element. However, EnviroDevelopment recognises that a *project* may include innovative sustainability measures which achieve an equivalent or greater sustainability benefit to a specific requirement. Innovation credits are awarded at the discretion of the National EnviroDevelopment Board of Management. Any claims for innovation credits must be accompanied by an outline of the measure and relevant supporting documentation to verify the sustainability benefit.

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 Demonstrate that any herbicide or pesticide use is undertaken in such a way to avoid contamination of aquatic ecosystems. The project demonstrates that:

- alternative pest control measures have been considered with the intent to avoid/minimise use of pesticides and herbicides;
- any use of herbicides and pesticides can be undertaken safely, with conservation benefit outweighing risk of harm; and
- potential environmental impacts of herbicide/chemical use have been considered and that significant impacts are not anticipated.

Statement outlining steps to minimise use of pesticides (including termite control), herbicides and artificial fertilisers and/or weed and pesticide management plan.

Criteria

Required Supporting Documentation

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.

1.2.3 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.

Construction management plan, identifying access locations.

1.2.4 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.

Statement from developer and registered landscape architect.

1.2.5 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.

Soil or landscape management plan.

1.3 EARTHWORKS

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

REQUIREMENT: Achieve EACH of the following:

1.3.1 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.

1.3.2 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.

Statement from engineer.

Note: *Projects* which require importation of fill for groundwater or other environmental considerations may apply for discretion under this criteria.



Criteria	Required Supporting Documentation
1.3.3 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.	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> .
1.3.4 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.	Statement from engineer.
1.3.5 Design and construct street layout to fit with topography with minimal disruption. Note: The achievement of this criteria should be balanced with solar orientation and other sustainability considerations including walkability/accessibility outcomes.	Pre and post civil contour maps.
1.3.6 Where there is contamination identified on site, employ best practice techniques to remediate contaminants including rehabilitation to meet regulatory requirements and suit future uses.	Contamination report and details on remediation actions.

1.4 URBAN ECOLOGY

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

REQUIREMENT: Achieve EACH of the following:

1.4.1 Demonstrate that <i>environmental weeds</i> will not be utilised in landscaping works.	Statement from registered landscape architect/horticulturalist.
1.4.2 Reduce urban heat island effect. This could be through: <ul style="list-style-type: none"> • reduction of hardstand areas; • consideration of roof reflectiveness, material and area; • utilisation of different materials for construction (e.g. open-grid pavement); • incorporation of breezeways and greenways; • provision of shading to roads, footpaths and bicycle paths; • maximising vegetative cover; and/or • green (vegetated) or shaded surfaces. 	Evidence from environmental science professional, registered landscape architect (or related professional) and plans.

REQUIREMENT: Achieve at least SIX credits from the following options:

1.4.3 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. 1 credit – ≤75% of the site area has been <i>significantly modified</i> . 2 credits – >75% of the site area has been <i>significantly modified</i> . 3 credits – <i>Brownfield site</i> .	Details of use of site prior to new <i>project</i> including <i>pre-project</i> site photos and statement from environmental professional/registered landscape architect/related professional detailing ecological value of the site prior to <i>project</i> .
1.4.4 The <i>project</i> is a refurbishment (2 credits).	Details of existing use and pre and post refurbishment building envelope.
1.4.5 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. 1 Credit – 90% of all plant species 2 Credit – 100% of all plant species Note: In relevant climates, species selected specifically to allow solar access are excluded from the 90% or 100% requirement.	Landscape palette and statement from registered landscape architect.

Criteria	Required Supporting Documentation
<p>1.4.6 Include green roofs or green walls, incorporating native plants species, into the <i>project</i>. 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. Consideration should also be given to orientation depending on climate zone.</p> <p>(2 credits)</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>1.4.7 Incorporate community and productive gardens in the <i>project</i> 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>1.4.8 Rooftop and relevant ground level plantings (including where appropriate streetscape plantings) increase canopy cover (when compared to the pre-developed site) by 20% (1 credit) or 50% (2 credits).</p>	<p>Landscape plan showing canopy coverage including rooftop.</p>
<p>1.4.9 Demonstrate that the planting palette for the <i>project</i> contains a mix of fast and slow growing species.</p>	<p>Statement from registered landscape architect.</p>
<p>1.4.10 Demonstrate appropriate consideration of viable planting spaces by:</p> <ul style="list-style-type: none"> • utilising appropriate media with low organic content (5% or less); • utilise appropriate species for planting which address functionality requirements; and • demonstrate appropriate consideration of soil depths for the proposed or existing plantings. 	<p>Statement from registered landscape architect.</p>
<p>1.4.11 Where there is an ecological need, provide features that allow habitat and refuge for fauna.</p>	<p>Statement from ecologist.</p>
<p>1.4.12 Minimise noise pollution during and post construction.</p>	<p>Construction management plan.</p>
<p>1.4.13 Incorporate native bee boxes and/or bird boxes into the <i>project</i>. These should be installed by an <i>appropriately qualified professional</i>.</p>	<p>Details on amount and location. Statement from registered ecologist on how the bees/boxes will improve ecological function.</p>
<p>1.4.14 Allocated a percentage of the site for <i>deep planting</i>; 1 Credit - 15% of site 2 Credits - >20% of site</p>	<p>Statement from registered landscape architect.</p>
<p>1.4.15 Contribute green space significantly in excess of the local government requirements for green space.</p> <p>Credits are to be allocated pro-rata for each 20% in excess of local government requirements and 5 credits for 100% in excess of local government requirements. This is capped at a maximum of 5 credits. 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>Note: 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>



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
- 2.3.1 under Post-Construction Phase and **two** credits from 2.3.2 - 2.3.4

INNOVATION

The following criteria details the requirements for certification of the Waste element. However, EnviroDevelopment recognises that a *project* may include innovative sustainability measures which achieve an equivalent or greater sustainability benefit to a specific requirement. Innovation credits are awarded at the discretion of the National EnviroDevelopment Board of Management. Any claims for innovation credits must be accompanied by an outline of the measure and relevant supporting documentation to verify the sustainability benefit.

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.

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.

Criteria	Required Supporting Documentation
<p>2.2.2 Recycle or reuse a minimum of 80% (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.</p> <p>Note:</p> <p>(i) Hazardous materials (e.g. asbestos, contaminated soil) are excluded.</p> <p>(ii) If reuse on site is not feasible, the establishment of partnerships which embrace industrial ecology principles is strongly encouraged.</p> <p>2.2.3 Recycle or reuse at least 80% of all built form construction waste (by volume).</p> <p>2.2.4 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 existing materials on site and arrangements and estimates of waste streams and generation.</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>

2.3 POST-CONSTRUCTION PHASE

INTENT: To provide recycling opportunities and facilities for end users to reduce waste going to landfill.

REQUIREMENT: Achieve the following:

<p>2.3.1 Provide separate waste receptacles for general and recyclable waste.</p>	<p>Details of location.</p>
<p>REQUIREMENT: Achieve at least TWO credits from the following options:</p>	
<p>2.3.2 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>2.3.3 Install a dehydrator/bio-digester/composter for the purposes of reducing food waste.</p> <p>2.3.4 Establish alternative mechanisms to encourage the reuse or recycling of appropriate waste streams e.g. mechanisms to facilitate and encourage container recycling.</p>	<p>Details of location.</p> <p>Details of system and location.</p> <p><i>Statement of compliance</i> from developer detailing program.</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).

INNOVATION

The following criteria details the requirements for certification of the Energy element. However, EnviroDevelopment recognises that a *project* may include innovative sustainability measures which achieve an equivalent or greater sustainability benefit to a specific requirement. Innovation credits are awarded at the discretion of the National EnviroDevelopment Board of Management. Any claims for innovation credits must be accompanied by an outline of the measure and relevant supporting documentation to verify the sustainability benefit.

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

3.3 SUBMETERING

INTENT: To ensure the provision of sub-metering to assist in the ongoing monitoring of energy usage throughout the *project*.

REQUIREMENT: Achieve the following:

3.3.1 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.

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

3.4 LIGHTING

INTENT: To increase the energy efficiency of lighting throughout the *project*.

REQUIREMENT: Achieve EACH of the following:

3.4.1 Provide efficient outdoor lighting such as through utilising solar power, fluorescent or LED fittings.

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

3.4.2 Automated lighting control, including occupant detection and daylight adjustment is provided.

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

3.4.3 Reduce reliance on lighting by providing outdoor spaces (breakout/gathering spaces) that allow students and staff to study, meet and work.

Evidence in plans with statement from architect.

3.5 HVAC

INTENT: To increase the energy efficiency of HVAC systems throughout the *project*.

REQUIREMENT: Achieve EACH of the following:

3.5.1 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.

3.5.2 Incorporate ceiling fans within teaching rooms and staff areas.

Evidence in electrical plans with *statement of compliance* architect/designer.

REQUIREMENT: Achieve at least ONE credit from the following options:

3.5.3 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 *statement of compliance* from engineer or developer.

3.5.4 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 *statement of compliance* from engineer or developer.

3.5.5 Install carbon dioxide monitoring devices to single HVAC systems which have a capacity over 20kW.

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

3.6 CARPARKS

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

REQUIREMENT: Achieve EACH of the following:

3.6.1 Install CO monitoring/controls to carpark exhaust systems.

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

3.6.2 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.

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



Criteria	Required Supporting Documentation
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3.7 LIFT SYSTEMS

INTENT: To reduce the energy usage of lift systems within buildings.

REQUIREMENT: Achieve the following:

3.7.1 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:

- use of regenerative drives;
- machine room-less elevators;
- dispatch control systems;
- intelligent automation; and/or
- stand-by modes.

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

3.8 REDUCTION IN GREENHOUSE GAS EMISSIONS

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

REQUIREMENT: Achieve the following:

3.8.1 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:

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

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).

INNOVATION

The following criteria details the requirements for certification of the Materials element. However, EnviroDevelopment recognises that a *project* may include innovative sustainability measures which achieve an equivalent or greater sustainability benefit to a specific requirement. Innovation credits are awarded at the discretion of the National EnviroDevelopment Board of Management. Any claims for innovation credits must be accompanied by an outline of the measure and relevant supporting documentation to verify the sustainability benefit.

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
BUILT FORM	
<p>4.1.5 Structure</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"> (a) concrete with $\geq 30\%$ supplementary cementitious materials or $\geq 30\%$ of recycled aggregate or an Environmental Product Declaration complying with EN1580. (b) steel with a recycled content $\geq 15\%$ or an Environmental Product Declaration complying with EN15804; (c) pre-cast panels with $\geq 15\%$ supplementary cement materials; (d) structural timber which is certified to a PEFC (Programme for Endorsement of Forest Certification) standard such as <i>AFS</i> (Australian Forestry Standard) or <i>FSC</i> (Forest Stewardship Council) standard; and/or covered by an Environmental Product Declaration complying with EN15804; (e) bricks containing a recycled content of at least 25%; or an Environmental Product Declaration complying with EN15804; and/or (f) reused materials (post-consumer) are utilised for $\geq 30\%$ of the structure. 	Statement from supplier and supporting technical information.
<p>4.1.6 Envelope/Linings</p> <p>The building envelope uses one or more of the following materials:</p> <ul style="list-style-type: none"> (a) timber window frames which are PEFC (e.g. <i>AFS</i>) or <i>FSC</i> accredited; (b) aluminium windows which contain $\geq 20\%$ recycled aluminium or glass by mass; (c) plasterboard consists of $\geq 10\%$ recycled gypsum; and/or (d) plasterboard consists of recycled paper. 	Statement from supplier and supporting technical information.
<p>4.1.7 Services</p> <p>Building services achieve one of the following:</p> <ul style="list-style-type: none"> (a) 25% of the total cost of PVC content is reduced through replacement with alternative materials; (b) PVC content is sourced from an ISO 14001 certified supplier; and/or (c) alternative products are used in preference to sheet metal. 	Statement from quantity surveyor and/or supplier and supporting technical information.
<p>4.1.8 Furniture, Fixtures, Equipment & Finishes</p> <p>Furniture, fixtures, equipment and finishes uses at least one of the following:</p> <ul style="list-style-type: none"> (a) underlay consists of 95% recycled product; (b) minimum 50% of the carpet has a rating of level 2 or greater under the Australian Carpet Classification Scheme Environmental Classification Scheme; (c) joinery uses PEFC (e.g. <i>AFS</i>) or <i>FSC</i> certified timber or wood product; and/or (d) materials which have a recycled content of $\geq 60\%$. 	Statement from supplier and supporting technical information.

Criteria	Required Supporting Documentation
ALTERNATIVE COMPLIANCE	
<p>4.1.9 Use lifecycle assessment (LCA) to quantify the environmental performance of materials selected for the <i>project</i>. At a minimum, the LCA(s) should be in accordance with:</p> <ul style="list-style-type: none"> • EN 15978 and demonstrate a combined 20% weighted improvement against standard practice in environmental performance using weightings that comply with the Building Products Innovation Council's lifecycle Inventory Data Protocol; or • 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 (kgCO₂e/gross building area/year). <p>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.</p>	<p>Lifecycle assessment of relevant products and details of quantities and uses within the <i>project</i>.</p>
4.2 EMISSIONS	
<p>INTENT: To increase the use of finishes and products which minimise the levels of VOC (Volatile Organic Compounds) emissions in buildings.</p> <p>REQUIREMENT: Achieve at least TWO credits from the following options:</p>	
<p>4.2.1 Use <i>low emission paints</i> on >95% (1 credit) or 100% (2 credits) 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>4.2.2 Use <i>low emission sealants</i> on >95% (1 credit) or 100% (2 credits) 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>4.2.3 Use <i>low emission adhesives</i> on >95% (1 credit) or 100% (2 credits) 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>4.2.4 Use <i>low emission floor coverings</i> on >95% (1 credit) or 100% (2 credits) 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>4.2.5 All composite and engineered wood products (including exposed and concealed applications) comply with the following formaldehyde emissions levels (or equivalent):</p> <ul style="list-style-type: none"> • panels with Particleboard base: E1 or better • panels with MDF base: E0 or better • other engineered wood products (LVL, Glulam, CLT, plywood etc): better than E0. 	<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).

INNOVATION

The following criteria details the requirements for certification of the Water element. However, EnviroDevelopment recognises that a *project* may include innovative sustainability measures which achieve an equivalent or greater sustainability benefit to a specific requirement. Innovation credits are awarded at the discretion of the National EnviroDevelopment Board of Management. Any claims for innovation credits must be accompanied by an outline of the measure and relevant supporting documentation to verify the sustainability benefit.

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
<h3>5.3 IRRIGATION REQUIREMENTS</h3> <p>INTENT: To reduce the use of <i>potable water</i> for irrigation purposes in external areas.</p> <p>REQUIREMENT: Achieve EACH of the following:</p>	
<p>5.3.1 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"> 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. <p>Note: the following exemptions may apply:</p> <ul style="list-style-type: none"> <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 <i>potable water</i> used to irrigate non-commercial food production gardens. 	<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-<i>potable water</i> 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>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.</p>	<p>Irrigation plan or statement from landscape architect regarding irrigation methods.</p>
<p>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.</p>	<p>Statement from registered landscape architect.</p>
<p>5.3.4 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 SWIMMING POOLS</h3> <p>INTENT: To reduce <i>potable water</i> usage through the reduction of water losses through evaporation.</p> <p>REQUIREMENT: Achieve EACH of the following:</p>	
<p>5.4.1 Where an outdoor swimming pool is included, the pool area should include at least two (2) of the following design elements to reduce evaporation:</p> <ul style="list-style-type: none"> pool blanket; non-potable top-up water source; shade devices (50% of pool area shaded); and/or protection from prevailing winds. 	<p>Statement of compliance from developer and architect.</p>
<p>5.4.2 Where a swimming pool is included within the <i>project</i>, 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>



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)
 - Community Prosperity (6.4)
 - Efficient and Accessible Transport (6.3)
 - Local Facilities (6.5)

INNOVATION

The following criteria details the requirements for certification of the Community element. However, EnviroDevelopment recognises that a *project* may include innovative sustainability measures which achieve an equivalent or greater sustainability benefit to a specific requirement. Innovation credits are awarded at the discretion of the National EnviroDevelopment Board of Management. Any claims for innovation credits must be accompanied by an outline of the measure and relevant supporting documentation to verify the sustainability benefit.

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 proactively engage with members of the existing community prior to application lodgement who may have an interest in the *project* through the preparation of a community engagement plan which outlines a schedule of engagement activities.

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
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 Alternative Transport Parking 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.
6.3.3 Pathways 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.
6.3.4 Active Transport Linkages 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 <i>project</i> .	Evidence in plans and/or statement on how the requirements have been met.
6.3.5 Public Transport Demonstrate access to public transport, such that 75% of dwellings are within: <ul style="list-style-type: none"> • 400m walking distance of a bus stop; • 800m walking distance from a railway station or <i>line haul station</i>; and/or • 1,200m walking distance from a <i>line haul station</i> located within a town centre. The stop/station must be serviced by at least ten services per weekday, linking the <i>project</i> 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.
6.3.6 Shared Transport Support/encourage community transport networks such as car pool or community minibus to facilities.	Evidence including arrangements and frequency.
6.3.7 Efficient Vehicles Provide parking for low-emitting, zero emitting, fully electric and fuel-efficient vehicles within the <i>project</i> for 5% of the total vehicle parking capacity of each site.	Evidence including the location and number of parks.



Criteria	Required Supporting Documentation
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6.4 COMMUNITY PROSPERITY

INTENT: 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.

REQUIREMENT: Achieve the following:

6.4.1 Develop a community economic/employment strategy with measurable outcomes which identifies:

- economic goals and priorities for the community;
- employment targets and the job balance ratio;
- activities to be provided within the *project* (e.g. retail, industrial, commercial or community based);
- socio-economic profile of the host local government area (based on at least the last two census);

Note: where there have been local government amalgamations, define using a similar area.

- how the *project* will contribute to the host local government area's socio-economic profile; and
- 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).

Statement of compliance from developer and evidence of community economic/employment strategy and implementation plan.

6.5 LOCAL FACILITIES

INTENT: To provide integrated communities to meet local needs and reduce the number of private car trips required.

REQUIREMENT: 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.

Note: Local facilities should be co-located near public transport stops and pathways.

6.5.1 Newsagent

6.5.2 Grocery/corner store

6.5.3 Primary school

6.5.4 Secondary school

6.5.5 University

6.5.6 Kindergarten, preschool, or childcare

6.5.7 Medical practice

6.5.8 Chemist

6.5.9 Specialty stores

6.5.10 Cafes and/or restaurants

6.5.11 Community centre

6.5.12 Public transport hub

6.5.13 Emergency services (including rural fire brigade, ambulance, police)

6.5.14 Community accessible facilities/spaces (e.g. rooms, public areas, education centres)

6.5.15 Educational facility or material (e.g. interpretive signage, tours, open days, brochures)

Evidence in plans, including walking distances.

SOLVING PROBLEMS THAT MATTER

- | Planning
- | Urban design
- | Landscape architecture
- | Environmental services
- | Heritage
- | Community engagement
- | Project management

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 National EnviroDevelopment Board of Management. The developer may be asked to demonstrate active design guideline enforcement.

Environmental weed is a plant that invades native ecosystems and adversely affect the survival of indigenous flora and fauna. They may have significant economic and social impacts, as well as environmental impacts, including reduction in biodiversity.

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.

Key worker is a person who is employed as an emergency service worker (police, ambulance, fire brigade etc), nurse or educator.

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/m²/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.

appendix

1.1 – Performance table for water harvesting in Victoria:

Average Annual Rainfall (mm)	Volume to harvest as % of total impervious runoff volume
200	93%
300	88%
400	83%
500	77%
600	72%
700	68%
800	64%
900	60%
1000	56%
1100	53%
1200	50%
1300	48%
1400	46%
1500	44%
1600	42%
1700	40%
1800	38%
1900	37%
2000-2500	32%
2500-3000	28%
3000-3500	25%
3500-4000	22%

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

- Sarah Macoun - HopgoodGanim (National Chair)
- Tammy Berghofer - Minter Ellison (Taskforce Chair)
- James Coutts - Department of State Development, Infrastructure and Planning, Queensland Government
- Leanne Weekes - Cooper Grace Ward Lawyers
- Graham Marshall - National Affordable Housing Consortium
- Nelson Wills - New Ground
- Peter Egerton - RPS
- Andrew Sly - Department of Sport and Recreation, Queensland Government
- Steve Dunn - Victorian Planning Authority
- Aaron Organ - Ecology & Heritage Partners
- Mark Taylor - Josh Byrne & Associates
- Lex Barnett - Taylor Burrell Barnett

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- Taylor Booysen - Mosaic Property Group
- Chris Boyle - Mosaic Property Group
- Marcus Brown - CDM Smith
- Patrick Campbell - Hutchinson Builders
- Dy Currie - Brisbane City Council
- Peter Egerton - RPS
- Will Francis - Wesley Mission Queensland
- Alan Hoban - Bligh Tanner (Ecosystems, Water)
- Sheree Hughes - Heart Foundation
- Genaea Keith - Economic Development Queensland
- Sarah Macoun - HopgoodGanim
- Graham Marshall - National Housing Consortium
- John Pradella - Pradella Property Ventures
- John Tuxworth - Australian Green Development Forum
- Leanne Weekes - Cooper Grace Ward Lawyers
- Nelson Wills - New Ground

Victoria Taskforce

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- Robert Considine - Melbourne Water
- Michael Darby - Quantum Management (Community)
- Ben de Waard - Sustainable Development Consultants (Energy, Water, Ecosystems)
- Craig Harris - LID Consulting (Energy, Materials)
- Mark Whalen - GHD (Water)

Western Australia Taskforce

- Alf Lay - LWP Property Group
- Ian Holloway - All Things Residential
- Lex Barnett - Taylor Burrell Barnett
- Mark Taylor - Josh Byrne & Associates
- Martin Bowman - Bowman & Partners Environmental
- Paul McQueen - Lavan
- Scott Bird - 360 Environmental

Notes

Checklist

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An Initiative of



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