

# Environmentally Sustainable Design Policy for Council Buildings and Infrastructure

**Date adopted:** 28 August 2017

**Responsible Service Areas:** Assets, Integrated Planning, Engineering

## Purpose

The purpose of this policy is to:

- Articulate Maroondah City Council’s (Council’s) position on the environmentally sustainable design (ESD) requirements to be achieved in the planning, design, construction, operation and management of Council buildings, and infrastructure.
- Improve environmental and operational outcomes, create healthy indoor and outdoor environments and reduce risks by aligning with Council’s strategic asset management approach of total life cycle considerations to ensure longevity and continued provision of services.
- Enable Council to achieve and exceed best practice ESD, aligned to the Maroondah 2040 Community Vision, by embedding ESD considerations into Council’s building and infrastructure program. This will be achieved through collaboration between Council service areas together with relevant expertise and external partners.
- To enable Council to achieve and exceed its targets within the Sustainability, Carbon Neutral, Climate Change Risk and Adaptation, Water Sensitive Cities, and Vegetation Strategies.
- To provide leadership and facilitate the uptake of ESD principles in the wider community.

## Background / Context

Buildings and infrastructure typically have a long life and typically require a significant amount of natural resources and capital to construct and operate, with their siting and design having an impact on their operation and the surrounding natural environment. They can however be designed to reduce their ecological footprint and impacts and be sympathetic and connected to their surroundings.

Council is committed to assets that reduce the environmental impacts throughout their lifecycle. The incorporation of ESD features are essential to achieving corporate sustainability targets and objectives. Council is a leader in the provision and operation of assets that are resource efficient, enhance the natural environment, and consider the broader needs and health of occupants both now and in the future. Council recognises that best practice ESD outcomes may incur additional upfront cost, however, are significantly outweighed by the financial savings and other co-benefits secured over the asset’s lifecycle.

The benefits of incorporating ESD into building and infrastructure projects include cost savings from reduced energy, water and waste; lower operational and maintenance costs; reduced public liability; improved stormwater and biodiversity outcomes; and enhanced occupant productivity and health.

## Policy Control Schedule

<b>Policy Title:</b> Environmentally Sustainable Design Policy for Council Buildings and Infrastructure		<b>Policy No:</b> IP-003	<b>Policy type:</b> Internal
<b>Policy creation date:</b> 28 August 2017	<b>Current version approved:</b> 5 October 2020	<b>Current version number:</b> V2	<b>Policy review date:</b> October 2021
<b>Parent policy:</b> None	<b>Child policy/policies:</b> None	<b>Policy responsibility:</b> Manager Assets, Manager Engineering & Building Services, Manager Integrated Planning	<b>eCLIP record number:</b> 20/238291

Some other co-benefits of incorporating ESD into building and infrastructure projects include:

- Delivering assets that are resilient to the impacts of climate change,
- Enhancing the wellbeing of facility users by connecting the natural and built environment and improving indoor environments for buildings,
- Encouraging the uptake of ESD practices in the wider community,
- Securing ongoing operation efficiencies, through improved asset management and less intensive maintenance regimes,
- Addressing gaps and the absence of minimum requirements in the National Construction Code (NCC) and relevant legislation,
- Reducing reliance on emissions intensive transport modes and facilitating active transport options, and
- Driving the uptake of low impact construction materials and stimulating local markets for recycled products.

## Scope

This policy applies to all projects listed in the **Policy Position** section (page 5) including:

- New, replacement and renewal of Council buildings including surrounding assets, and
- The design and construction of Council infrastructure including, but not limited to, carparks, footpaths, roads and drainage.

The ESD approach taken and suite of requirements will be relative to the location, use and size of the project. It is for use by Council staff and external stakeholders involved in Council's building and infrastructure projects.

Standards outlined in the **Policy Position** section are minimum requirements. Innovation and higher standards are sought where additional economic, social, and environmental benefits can be achieved, or where it supports the development of sustainable design technologies and approaches.

Requirements to help meet the objectives are outlined in the *ESD Policy Guidelines for Council Buildings and Infrastructure*.

## Objectives

The following overarching objectives should be achieved for building and infrastructure projects by tailoring the ESD approach to environmental priorities for the site and most effective fit for purpose measures.

### Climate Change Risks

- Prepare for projected future changes in climate by increasing the resilience of buildings and infrastructure.
- Integrate building vulnerability assessment at the design stage for new buildings and renewal with regard to building type, use and location. Identify significant risks to be addressed in building design and construction.
- Identify actions that can provide stand-by power generators for nominated emergency relief centres, improved building performance in extreme weather and incorporate thermal comfort, drainage, and water storage considerations into building retrofit designs.
- Select and use appropriate climate sensitive materials and urban elements.

### Energy

- Work towards net zero carbon buildings.
- Use passive design principles and energy efficiency to minimise operational energy needs, carbon emissions and peak demand.
- Create comfortable and healthy indoor environments by maximising natural light, indoor planting, passive design and cooling techniques such as night purging, adequate ventilation and fresh air intake.
- Increase the generation of on-site renewable energy to reduce reliance on fossil fuels.
- Encourage the use of innovative technology to monitor and inform occupants of a building's energy usage.

## Management & Governance

- Integrate ESD into the building and infrastructure project process, beginning at the budgeting and planning stage, through clear communication and collaboration with relevant stakeholders.
- Empower and build capacity of staff to implement this ESD Policy by identifying training needs through the Review, Acknowledgement, Development and Recognition (RADAR) process.
- Apply a whole of life cycle and value for money approach to decision making.
- Encourage innovation and learning through partnerships with external organisations, and participation in projects trialling new technology.
- Facilitate understanding of environmental and ESD outcomes and optimal operation through awareness raising, monitoring, reporting and training.
- Design for future adaptive-reuse of the building ensuring the structure does not become redundant if the original use intentions change.

## Materials

- Maintain a healthy indoor air environment quality by reducing indoor pollutant levels using non-toxic low volatile organic compound (VOC) materials.
- Encourage responsible sourcing of construction and fit out materials, including reused content, recycled content, certified and recyclable materials.
- Encourage the use of materials with a low embodied carbon such as timber and geopolymer concrete.
- Encourage the use of durable, low-maintenance materials which have long term reusability.

## Sustainable Transport

- Encourage and promote a shift to sustainable transport modes that reduce greenhouse gas emissions and encourage physical activity through design that increases access and connectivity to encourage growth in public transport usage, cycling and walking.
- Explore innovative parking solutions that consider future needs and new transport trends and technologies (e.g. driverless cars, electric vehicles, car and bike share schemes).

## Urban Ecology

- Ensure that project works minimise impact on open space and create healthy and comfortable outdoor spaces that use vegetation to provide shade, fresh air, cooling, wind and flood protection, address the urban heat island effect and increase amenity.
- Any vegetation removal to be compensated by biomass equivalent.
- Retain, protect, improve and/or add vegetation (on and off-site, vertical and rooftop) to contribute to enhancement of urban cooling and/or habitat provision for local biodiversity.
- Incorporate stormwater capture, retention, reuse and detention options (on and off-site and rooftop) that contribute to enhancing urban cooling, supporting vegetation, and provision of habitat for local biodiversity.

## Waste

- Maximise the avoidance, reduction, reuse and recycling of materials during demolition, construction and operation of buildings.
- Target a minimum diversion rate of 80% of construction and demolition waste diverted from landfill.
- Target the use of it for purpose recycled content construction materials.

## Water & Stormwater

- Reduce potable water use.
- Increase fit for purpose alternative water sources.
- Improve stormwater quality, reduce stormwater flow and encourage reuse and passive irrigation for urban greening and cooling
- Plan and design to increase resilience to flooding and drought using an integrated water management approach which addresses water sensitive city objectives

## Policy Principles

To enable decisions to influence outcomes aligned to the intent of this policy the following principles are to be incorporated into decision making:

- Apply best value principles that incorporate total life cycle costs, assess the benefits of action as well as consequences of inaction and consider stakeholder needs.
- Ensure Policy implementation is adequately resourced to achieve Policy standards and objectives and to support staff to further knowledge and expertise. Strive towards allocation of a minimum ESD budget allocation of 10% of the total project cost, as assessed on a project by project basis. ESD measures with a simple payback of 10 years or less are to be implemented.
- Maximise long-term environmental, economic and social benefits, giving high priority to protecting the health of ecosystems on which life and health depends.
- Embrace a collaborative approach for key internal stakeholders, external consultants and partners to jointly drive ESD outcomes, and develop viable options and preferred approaches.
- Ensure transparency in decision making and reporting on outcomes.

## Relationship to the Maroondah 2040 Community Vision

The ESD Policy aligns and responds to the key outcome areas and key directions of Maroondah 2040 as follows:

<i>Community Outcome:</i>	<i>A clean, green and sustainable community</i>
<i>Key Directions:</i>	<i>4.2, 4.3, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10</i>
<i>Community Outcome:</i>	<i>An accessible and connected community</i>
<i>Key Directions:</i>	<i>5.2, 5.4, 5.5, 5.7, 5.8</i>
<i>Community Outcome:</i>	<i>An attractive, thriving and well built community</i>
<i>Key Directions:</i>	<i>6.2, 6.3, 6.7, 6.8, 6.1</i>
<i>Community Outcome:</i>	<i>A well governed and empowered community</i>
<i>Key Directions:</i>	<i>8.2, 8.7</i>

## Policy Position

The requirements, standards and tools in the following table, should be applied to all Council building projects and surrounding assets, and developed in conjunction with the *ESD Policy Guidelines for Council Buildings*.

Project type	Project size or budget	Report requirement at design stage	ESD Target and applicable tools/standards
<b>Building - New</b>	Over \$5 million	Sustainable Management Plan (SMP)	Minimum 5 Star (aspiration of 6 star achievement where achievable) certified rating under a current version of the Green Star - Design & As Built rating tool
	\$3-5 million	SMP	Minimum 5 Star certified Design and equivalent As Built under the current version of the Green Star rating tool
	\$1-3 million	SMP	Minimum 4 Star certified Design and equivalent As-Built under a current version of the Green Star - Design & As Built rating tool or Built Environment Sustainability Scorecard (BESS) excellence
	Under \$1 million	Sustainable Design Assessment (SDA)	BESS best practice – excellence
<b>Building - Renewal/ renovation</b>	>70% change to gross floor area (GFA), or >\$1 million	SDA	BESS excellence
	30-70% change to GFA, or <\$1 million	SDA	BESS best practice - excellence
<b>Building - Fit outs</b>			Meet the requirements set out in the <i>ESD Policy Guidelines for Council Buildings</i> for the following: <ul style="list-style-type: none"> <li>Water Efficiency Labelling and Standards (WELS) scheme specified for water efficient appliances, fittings and fixtures</li> <li>Energy Rating Label specified for electrical appliances</li> <li>Guidance from the materials section</li> </ul>
<b>Infrastructure</b>	<\$500,000		ESD Checklist where applicable and feasible
	\$500,000-2.5 million	ESD Checklist	Meet sustainability objectives/best practice and ESD Checklist where applicable and feasible Reference Green Star Communities Tool Materials Credits
	Over \$2.5 million	SMP	Reference Green Star Communities tool - Materials Credits, and Infrastructure Sustainability rating tool where appropriate and feasible Infrastructure Sustainability (IS v 2) Design and As Built rating tool - Gold rating (certified by ISCA) for projects over \$20 million.

### Notes:

- Projects \$2.5 million and over - ESD consultant to be engaged
- Projects under \$2.5 million - ESD to be addressed by the lead consultant
- Design and Construct, and complex projects to engage Independent Commissioning Agent

## Policy Implementation

Implementation of this policy should begin early in the project planning, such as at the master planning or feasibility stage and flow through to scoping, design, construction and ongoing maintenance and asset management. The

flowchart below includes the main decision points and departments responsible for inclusion of ESD. It should be read and implemented in conjunction with the process and responsibilities outlined in Section 3 of the *ESD Policy Guidelines for Council Buildings and Infrastructure*.

## Procedural Flowchart

<b>Scoping and Business Case</b>	Create Project Working Group that includes relevant service area representatives	>	Identify relevant ESD standards and policy requirements	>	Include ESD allowance for design, construction and commissioning in project budget estimates		
	<i>Lead:</i> PS <i>Includes:</i> A, IP, RSA		PS A, C, IP, RSA		PS A, IP		
<b>Design</b>	a) Projects \$2.5m & over ESD consultant to be engaged b) Projects under \$2.5m - ESD to be addressed by lead consultant	>	Design & construct and complex projects to engage Independent Commissioning Agent	>	Sign off ESD scope of works in tender design brief	>	Review ESD design proposal against design brief
	<i>Lead:</i> PM <i>Includes:</i> IP		PM A		PM PWG, PSG, CMT, Council, ICA		PM A, IP, RSA, ICA
<b>Contract development</b>	Sign off ESD detail design for inclusion in construction tender	>	Include hold points for ESD components, building tuning period, and commissioning	>	Include Environmental Management Plan requirements in construction tender	>	Ensure that any certifications such as Green Star requirements are included in the construction tender
	<i>Lead:</i> PM <i>Includes:</i> ESDC, IP, RSA		PM FG, IP, ICA		PM FG, IP		PM FG, IP
<b>Construction</b>	Implement checks at set milestones to ensure ESD requirements are being included in the works	>	Ensure that any certifications such as Green Star requirements are included in the construction tender	>	Ensure documentation for any third party certifications is collected for submission	>	Ensure ESD sign off before practical completion
	<i>Lead:</i> PM <i>Includes:</i> C, ESDC, ICA		PM C, ESDC, ICA		PM C, ESDC, ICA, Co		PM A, C, Co, IP, RSA, ICA
<b>Commissioning, tuning and handover</b>	12 months commissioning and building tuning to include ESD performance and handover	>	Develop an As-Built summary building users guide and maintenance manual	>	Provide information and training for Facility Managers and user groups for optimal ESD performance	>	Monitor and report on ESD implementation and the ESD performance of the building
	<i>Lead:</i> PM, A <i>Includes:</i> C, ESDC, ICA		PM, A C, ESDC, ICA		PM A, IP, CM, ESDC, FM, UG		PM A, IP, CM, ESDC, FM, UG

**Responsible parties** – **A:** Assets; **C:** Consultant; **Co:** Contractor; **CM:** Communications & Marketing; **ESDC:** ESD Consultant; **FG:** Finance & Governance; **FM:** Facility managers; **ICA:** Independent Commissioning Agent; **IP:** Integrated Planning; **PM:** Project manager; **PS:** Project sponsor; **PSG:** Project Steering Group; **PWG:** Project Working Group; **RSA:** Relevant service areas; **UG:** User groups.

## Related Legislation

There is no overarching regulation or legislation for ESD to be included in buildings and surrounding assets, and infrastructure, however the following State Government plans and framework provide overarching support for this work:

- Plan Melbourne 2017
- Protecting Victoria’s Environment – Biodiversity 2036
- Victoria’s Climate Change Adaptation Plan 2017-2020
- Victoria’s Climate Change Framework
- Water for Victoria
- State Planning Policy Framework (SPPF) within the Maroondah Planning Scheme and its iterations in the Local Planning Policy Framework (LPPF) of the Scheme (if triggered).

## Relevant Council policies, strategies, procedures and guidelines

Maroondah 2040: Our future together	Open Space Policy and Strategy 2016
Council Plan 2017 - 2021	Sites of Biological Significance 1997
Annual Budget	Sustainability Strategy 2016-2020
Asset Management Policy and Strategy 2014	Tree Maintenance Guidelines 2017
Carbon Neutral Strategy 2014-2021	Tree Planting Guidelines 2017
Community Engagement Policy 2015	Tree Policy 2017
Draft Climate Change Risk and Adaptation Strategy	Tree Protection Guidelines 2017
Habitat Corridors Strategy 2005	Water Sensitive City Strategy 2015
Infrastructure and Landscape Guidelines 2008	Vegetation Strategy 2020-2030
Biodiversity in Maroondah 2020	

## Glossary

**Asset:** Within Maroondah City Council assets are managed by Council on behalf of the community to provide a broad range of services. Assets are a physical component of a facility, which has value, enables services to be provided, and has an economic life of greater than 12 months. Some of these asset types are buildings, carparks, parks and reserves, stormwater drainage pipes and structures and furniture and equipment.

**BESS:** an online sustainability assessment tool developed by the Council Alliance for a Sustainable Built Environment (CASBE), an alliance of Victorian Councils working to improve the sustainability of the built environment, to assess the sustainability of building projects at the design stage.

**Best practice:** In the context of this policy best practice is defined as a combination of commercially proven techniques, methodologies and systems, appropriate to the scale of development and site-specific opportunities and constraints, which are demonstrated and locally available and have already led to optimum ESD outcomes. Best practice in the built environment encompasses the full life of the build.

**Council buildings and surrounding assets:** Council buildings and surrounding assets are assets managed by Council on behalf of the community to provide a broad range of services including leisure services, community services, arts and cultural services, aged services, children’s services. The surrounding assets are the carparks, paths and open space that can be impacted by and/or contribute to the building project.

**Ecological Footprint:** The amount of biologically productive land and water needed to produce all the resources consumed by a person, population, or activity and to absorb the waste produced, including greenhouse gas emissions. The ecological footprint for Australians is 9.3 global hectares per person, while the planet’s resources will only allow 1.7 global hectares per person.

**Environmentally Sustainable Design (ESD):** Building design that seeks to improve building performance, reduce environmental impacts, resource use and waste and create healthy environments for occupants.

**Green Star:** Developed by the Green Building Council of Australia (GBCA), buildings can be Green Star accredited for the environmental sustainability of their design and/or construction; fit outs and their operational performance. Buildings are accredited through an assessment by a third party and can achieve between a 4-6 star accreditation.

**Gross floor area:** A building's total floor area including all roofed areas, measured from the outside of external walls or the centre of party walls.

**Independent Commissioning Agent:** A role that can be filled by one or more people who advocate for, and report directly to, the project owner. They are independent of any contractor, sub-contractor or consultant who has been involved in the design or installation of the nominated building systems. They are a registered professional engineer or qualified technician with demonstrated knowledge on nominated systems commissioning.

**Infrastructure Sustainability Tool (IS):** IS Rating Scheme is Australia and New Zealand's only comprehensive rating system for evaluating sustainability across the planning, design construction and operational phases of infrastructure projects. IS evaluates the sustainability performance of the quadruple bottom line (governance, finance, environment, social). Formal certification is only available for projects over \$20 million in value. The framework can be used informally in developing SMP reports for smaller projects.

**Relevant service areas:** Council service areas who can provide input and advice on ESD relevant to their area of expertise (e.g. Operations for urban ecology; Engineering & Building Services for stormwater)

**Renewal:** Includes any work that is focused on refurbishing, rehabilitating, renovating, or restoring an existing asset to its required functional condition, and providing enhanced longevity for the existing asset through an extension to its useful life. Renewal also includes the replacement of an existing asset with a new asset of equivalent capacity or performance capability.

**Sustainable Design Assessment (SDA):** A simple sustainability assessment that indicates how a project will address sustainability objectives, targets and standards – in this case of the *ESD Policy for Council Buildings* and the *ESD Policy Guidelines for Council Buildings* requirements.

**Sustainable Management Plan (SMP):** A detailed sustainability assessment that indicates how a project will address sustainability objectives, targets and standards and how the performance outcomes will be achieved – in this case of the *ESD Policy for Council Buildings* and the *ESD Policy Guidelines for Council Buildings* requirements. The SMP must also provide a schedule for implementation, ongoing management, maintenance and monitoring and how the ESD elements and practices can be maintained over time.

**User Groups:** Existing and future users of Council facilities.

## Supporting Documents

- *Environmentally Sustainable Design Policy Guidelines for Council Buildings and Infrastructure* related to this policy for further guidance on implementing this policy.
- Project specific Sustainability Management Plan (SMP) relative to the size, location, and intended uses of the project.

The following resources and references are relevant to the **Policy Position:**

- Australian Building Codes Board (ABCB), National Construction Code (NCC), <https://ncc.abcb.gov.au>
- Australian Government, Water Efficiency Labelling and Standards (WELS) Scheme, [www.waterrating.gov.au/](http://www.waterrating.gov.au/)
- Energy Rating, [www.energyrating.gov.au/](http://www.energyrating.gov.au/)
- Green Building Council of Australia, <http://new.gbca.org.au/>
- Infrastructure Sustainability Council of Australia, ISCA IS Design and As Built rating tool, [www.isca.org.au/](http://www.isca.org.au/)
- Municipal Association of Victoria, Built Environment Sustainability Scorecard (BESS), <http://bess.net.au/>