CITY OF MONASH

ENVIRONMENTAL SUSTAINABLE DESIGN POLICY

FOR COUNCIL BUILDINGS & INFRASTRUCTURE

Policy Control Schedule

Directorate:	Infrastructure and Environment
Responsible Officer:	Trish McGee - Sustainability Coordinator
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About the policy

This policy is based on template documentation prepared for the eight member councils of the Eastern Alliance for Greenhouse Action (EAGA): Glen Eira, Stonnington, Whitehorse, Boroondara, Maroondah, Monash, Yarra Ranges and Knox. Environmentally Sustainable Design (ESD) policies and environmental strategies were compared and critiqued through a benchmarking process which involved researching and defining "best practice" for Victorian councils. The document is the culmination of a policy development process with each council with tailored recommendations.

Surveys and workshops were conducted with each council to assess the current and potential effectiveness of ESD implementation. The results of these surveys have informed the policy template and the template guide that accompanies this document.

With appropriate budget, resourcing and customised processes for implementation based on the needs of each individual council, best practice is achievable for Melbourne's eastern councils.

Purpose

- Establish a consistent approach for achieving best practice Environmentally Sustainable Design (ESD) outcomes in the design, construction, and operation of buildings and infrastructure
- Drive innovation and sustainability leadership in through Council processes and practices
- Aligns with the vision of the Council's Environmental Sustainability Strategy 2016-26 strategy

Context

Council recognises that best practice ESD cost is outweighed by the financial savings and other co-benefits secured over the asset's lifecycle.

Other co-benefits may include but are not limited to:

- 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 operational 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
- Driving the uptake of low impact construction materials and stimulate local markets for recycled products

Scope

This policy applies to:

- The design, construction and operation of all major renewals, renovations, and upgrades to Council buildings.
- The design and construction of Council infrastructure including but not limited to carparks, footpaths, roads and drainage.
- Council staff and all external designers, engineers, contractors and stakeholders involved in capital works projects.

Objectives

The following objectives set out Council's commitment for the delivery of ESD outcomes. Depending on the size of the project, Council will develop or instruct the Principal Consultant to prepare a **Sustainability Management Plan (SMP)** which documents how all ESD objectives, targets and standards will be met,

and how the performance outcomes will be achieved.

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. The SMP should be used to survey available sustainable technologies and innovative approaches, and to resolve any questions around feasibility of applying ESD initiatives to the project or program. For a program of works, one regularly updated SMP will generally meet requirements. This checklist can assist:

Objective	Buildings	Infrastructure	☑ Applicable to Project / Program	QA and project notes
Greenhouse gas emissions				
All building services to be powered by electricity (no fossil fuels) using efficient heating, cooling and hot water, except under exceptional circumstances or when user needs cannot be met	✓		☐	
Use 100% renewable energy, through onsite generation and storage and/or also offsite renewable energy (i.e. GreenPower, PPA) via retailing arrangements.	✓		☐	
Procurement of materials and choice of construction methods must reduce embedded carbon emissions for the project wherever feasible – target materials cause less emissions in their production (i.e. target an 80% reduction in embedded carbon or seek to be carbon neutral).	✓	✓	☐	
Indoor Environment				
Orient building along East-West axis where possible and appropriate. Main building entrances facing south, south-east or south-west, must include an airlock or revolving door.	✓		☐	
All windows fitted with blinds, shade screening and/or window tinting to minimise glare. Provide good levels of natural light to most of the occupied area.	✓		☐	
Incorporate double glazed windows, insulation and draft proofing as standard.	✓		☐	
Adaptation and Resilience				
Where appropriate, aim to design for at least a 100-year asset life to greatly reduce lifecycle cost. Design for long term resilience, adaptability and flexibility. Most appropriate for significant builds.	✓	✓	☐	
Ensure that climate change impacts and adaptation has been addressed to improve resilience to extreme weather events.	✓	✓	☐	

Objective	Buildings	Infrastructure	☑ Applicable to Project / Program	QA and project notes
Waste				
Divert a minimum of 70% of the demolition and construction waste by weight to recycling.	✓	✓	☐	
Specify recycled content construction materials. This is to help generate and support markets for recycled materials.	✓	✓	☐	
Well marked waste bin locations for separate collection of landfill, paper, cardboard, glass, plastic and organics. Dedicated storage for waste and recycling with easy access for collection. A waste management plan must be prepared.	✓		☐	
Biodiversity				
Ensure that landscaping and plant selection enhances local biodiversity values with preference for at least 70% by area of new plants being indigenous and drought resistant, where appropriate.	✓		☐	
Ensure that the design retains and plants canopy trees and understorey. where possible to contribute to urban greening and to reduce the urban heat island effect.	✓	✓	☐	
Transport				
Infrastructure must support all forms of active transport and wherever possible prioritise safe environments for pedestrian and bicycle users, and electric gadget users (e.g. electric or mobility scooters).	✓	✓	☐	
Wherever possible buildings incorporate end of trip facilities including secure bicycle parking, shower and change room numbers using Green Star standards.	✓		☐	
Consider provision of electric vehicle charging infrastructure, charging and cabling wherever feasible.	✓	✓	☐	
Stormwater				
Water Sensitive Urban Design (WSUD) elements should be included in drainage design to contribute to landscape design and urban cooling.	✓	✓	☐	
Aim to achieve 100% of BPEM stormwater targets (a 45% reduction in nitrogen runoff) through harvesting, infiltrating and WSUD treatments.	✓	✓	☐	

Objective	Buildings	Infrastructure	☑ Applicable to Project / Program	QA and project notes
Use permeable materials and infiltrate stormwater where possible to reduce runoff volumes. Target 40% reduction in average annual runoff volumes pre and post development.	✓	✓	☐	
Materials				
Specify (where feasible) reused / recycled / low emission/ eco-certified content in building and infrastructure construction materials (e.g. roads, framing, slabs, footpaths, shared paths, kerb and channel, paint).	✓	✓	☐	
Optimise the size, shape and layout of buildings to reduce costs and materials use.	✓		☐	
Timber requirements: must be responsibly sourced and FSC or PEFC certified[1].	✓	✓	☐	
Concrete requirements: Use of low embedded carbon (Geopolymer / E-Crete) concrete, or substitute 30% of Portland cement with supplementary extenders. Specify that at least 40% of coarse aggregate or 25% of fine aggregate (sand) is a recycled material[2].	✓	✓	☐	
Energy and water efficiency				
Minimum 40% efficiency improvement over existing National Construction Code (NCC) for both water and energy use. The project's Sustainability Management Plan will detail how this can be achieved.	✓		☐	
Insulation and building wrap to be inspected for correct installation by architect / Council representative at lockup stage prior to installation of plasterboard. Building pressure testing and thermal scan should be completed as part of commissioning to ensure insulation quality and building thermal efficiency	✓		☐	
All lighting should be LED and may include sensors. Outdoor lighting to be **high efficiency LED** warm white colour with daylight controls. No up lighting permitted.	✓	✓	☐	

[1] See Green Star Design and As-Built v1.2 Materials credits for more details

[2] See Green Star Design and As-Built v1.2 Materials credits for more details

Objective	Buildings	Infrastructure	☑ Applicable to Project / Program	QA and project notes
Management				
Building metering and monitoring, install and commission a Metering and Monitoring system capable of metering main energy circuits in the building such as lighting, hot water, HVAC and Solar. Where the installation of a BMS might achieve operational efficiencies, water meters including check meters are to be installed for new buildings to distinguish between building and external irrigation uses. Monitoring system capable of gathering and reporting usage data from all meters to alert facilities team in case of atypical or high usage. Ensure all energy and water consumption can be easily monitored remotely by Council facilities and ESD team. A building user and maintenance guides be produced to Green Star standards and issued to facilities manager and occupants as part of the commissioning and tuning process.	✓		☐	
A project / program specific Construction Environmental Management Plan (CEMP) should be completed by the main construction contractor and approved by Council.	✓	✓	☐	

Project Management Requirements

It is Council policy that all new and refurbishment of existing Council buildings and infrastructure will adhere to the following **requirements,** and **additional requirements** (where applicable and feasible):

Requirement	Project Stage	Applicability check ☑ and responsibility for implementation	QA and project notes
Demonstrate, at business case stage, how project will contribute towards achieving Council's sustainability targets.	Bidding and planning	☐	
Ensure that the business case includes budget for items required to meet sustainability principles and that respective teams are consulted at business case stage.	Bidding and planning	☐	
Include ESD principles into the project brief at inception, concept design, at detailed design and in tender documents.	Bidding and planning, Design	☐	

Requirement	Project Stage	Applicability check ☑ and responsibility for implementation	QA and project notes
Seek specialist ESD technical advice for larger projects from project inception to delivery. There may be additional requirements for different sized projects.	Bidding and planning, Design, Delivery	☐	
Generate a SMP and refer this to Council's ESD/environment officer for review prior to tendering.	Design	☐	
Document at schematic design stage in the Sustainability Management Plan (SMP) to explain of how the project or program will meet sustainability targets.	Design	☐	
Building SMP reports must clearly summarise the project specific sustainable design requirements and be supported by an appropriate ESD tool.	Design	☐	
Infrastructure SMP reports must consider; sustainable construction materials procurement, construction environmental management, biodiversity enhancement opportunities, and integrated water management.	Design	☐	
Use the SMP report to consult with other internal stakeholders responsible for ESD, WSUD engineering, transport and biodiversity.	Design	☐	
Use lifecycle costing in procurement and contracting. Target the best long-term value to Council, rather than the cheapest up-front cost. Value management must protect ESD and recognise the value of community and environmental goals.	Procurement, Tendering, Delivery	☐	
Ensure that ESD objectives are included within the deliverables for tendered work.	Procurement, Tendering, Delivery	☐	
Ensure that commissioning, building tuning and handover is undertaken in a comprehensive way and that it includes the management of sustainable design initiatives in the operations and maintenance manuals.	Delivery, Occupancy	☐	
Report to Council annually as part of the capital works program delivery report on the key achievements of the sustainable buildings and infrastructure policy.	Delivery	☐	

Project specific requirements:

This section outlines the specific requirements of different sizes and types of project. Larger projects require more involved and detailed project sustainability management initiatives.

Project cost	<$1mill	>$1mill	>$10mill	>$20mill
Require Sustainability Management Plan (SMP) for **buildings** and I**nfrastructure**	Yes – short form Sustainable Design Assessment (SDA) (refer to Policy Guidelines)	Yes	Yes	Yes
SMP objectives and applicable toolkit for **buildings**	Meet relevant Environmental Sustainable Design (ESD) objectives and requirements as above plus: Council ESD checklists	Meet relevant ESD objectives and requirements as above plus: BESS tool targeting Excellence or Green Star Buildings 4 Star (Uncertified, use to guide the SMP)	Meet relevant ESD objectives and requirements as above plus: Green Star Buildings 4 or 5 Star (Uncertified, use to guide the SMP)	Meet relevant ESD objectives and requirements as above plus: Green Star Buildings 5 or 6 Star (May be certified, use to guide the SMP)
SMP plans and applicable toolkit for **infrastructure**	Meet sustainability objectives where applicable and feasible.	Meet sustainability objectives where applicable and feasible.	Meet sustainability objectives where applicable and feasible. Reference Green Star Communities tool Materials Credits.	Infrastructure Sustainability (IS v 2) Design and As Built rating tool – Gold rating (Certified by ISCA).
Suitably qualified ESD professional appointed to the design team	Only if required to trial innovative approaches	Yes	Yes	Yes
Council to appoint an Independent Commissioning Agent (ICA)	Only if required to trial innovative approaches	Yes	Yes	Yes

Supporting documents

- ***Policy guide for sustainable capital works*** related to this policy for further information and background to this policy.
- Project specific **Sustainability Management Plan** (SMP) relative to the size, location, and intended uses of the project
- Waste management guidelines for Multi-Unit developments

Further Information

Glossary

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. http://bess.net.au/

BPEM: Best Practice Environmental Management Guidelines for Stormwater – administered by EPA Victoria.

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

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

Independent Commissioning Agent (ICA): A role that can be filled by one or more people who are appointed by, and report directly to, Council. 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 mechanical, electrical, hydraulic and ESD systems commissioning.

Integrated Water Management (IWM) and Water Sensitive Urban Design (WSUD): An holistic approach to water management that integrates urban design and planning with social and physical sciences in order to deliver water services and protect aquatic environments in an urban setting. A WSUD approach could include the integration of raingardens, infiltration, water harvesting and wetlands in an urban area to manage stormwater.

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 programs, projects, networks and assets. IS evaluates the sustainability performance of the quadruple bottom line (Governance, Economic, Environmental and Social) of infrastructure development. 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.

Lifecycle cost: The total cost of an asset throughout its useful life taking account of the planning, design, construction, acquisition, operational, maintenance, rehabilitation, and disposal costs.

Sustainable Design Assessment (SDA): A simple sustainability assessment for **small** projects that documents how a project will address sustainability objectives, targets and standards.

Sustainable Management Plan (SMP): A detailed sustainability assessment for **larger** projects that documents how a project will address sustainability objectives, targets and standards and how the performance outcomes will be achieved. 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.

Policy and legislation references:

Relevant Legislation

- Local Government Act 2020 – Objectives of a Council
- Environment Protection Act 1970
- SEPP (Waters) – State Environmental Protection Policy outlining Council water and stormwater quality responsibilities.
- Recycling Victoria Policy 2020

Related Council Policies

- Environment Sustainability Strategy 2016-2026
- Procurement policy
- Contract Management policy

Related State and Local References

- Integrated Water Management Framework for Victoria 2017
- Victorian Planning Provisions (VC154 amendments – Stormwater Management) 2018
- Local Planning Policy – Environmentally Sustainable Development

International Agreements

- This policy has been assessed against and complies with the Charter of Human Rights.
- This policy assists in achieving elements of the UN Sustainable Development Goals

References relevant to the Policy:

- **Beyond Zero Emissions (BZE),** Buildings Plan: https://bze.org.au/research/energy-efficient-buildings-plan/ and Zero Carbon Cement Plan: https://bze.org.au/research/manufacturing-industrial-processes/rethinking-cement/
- **Australian Carpet Certification Scheme,** Carpet Institute of Australia, www.carpetinstitute.com.au
- **Ecospecifier**, www.ecospecifier.com.au/ building materials and products certification,
- **Energy Star Labelling** www.energyrating.gov.au/ appliance Energy Rating,
- **Forest Stewardship Council (FSC)**, Public certificate search, http://info.fsc.org/certificate.php
- **Global Green Tag**, www.globalgreentag.com/ building materials and products certification,
- **Green Star Design and As-Built tool** (used for buildings), http://new.gbca.org.au/ Green Building Council of Australia (GBCA)
- **Green Star Communities tool**, http://new.gbca.org.au/(used for precincts and infrastructure) Green Building Council of Australia (GBCA)
- **Green Environmental Choice Australia**, www.geca.org.au/
- **ISCA IS Design and As Built rating tool** Infrastructure Sustainability Council of Australia www.isca.org.au/
- **National Construction Code (NCC)** https://ncc.abcb.gov.au/Australian Building Codes Board
- **WELS Water Rating product labelling:** Water Efficiency Labelling and Standards (WELS) Scheme, www.waterrating.gov.au/