

SUSTAINABLE DESIGN STRATEGY



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Revised Sustainable Design Strategy 2013

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Front Cover: Gryphon House Extension, Finalist for Best Contribution for Sustainable Development Small Scale, 2007 City of Port Phillip Design and Development Awards

Architects: Simon and Freda Thornton

Features Include: Re-use of existing dwelling, passive solar design, thermal mass, cross ventilation, photovoltaic solar energy system, solar hot water system, water storage, grey water system, plantation and recycled materials and drought tolerant landscaping

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EXECUTIVE SUMMARY

The Sustainable Design Strategy (2013) is an update of council's Sustainable Design Strategy and Policy (2006). The new strategy incorporates a revised Sustainable Design Policy and reinforces council's philosophy of creating sustainable buildings which collectively contribute to a more sustainable urban environment.

This strategy synergises the evolving changes within the design and construction industry in response to sustainable development by providing a framework that supports the integration of sustainable design early in the design process where the most economical and sustainable outcomes can be achieved.

To support this philosophy, council will continue to adopt the same approach for its own developments and to also advocate for sustainable design to be more integrated within the planning process.

This strategy sets council's approach in the following ways:

- Providing context on the development, implementation and review of Sustainable Design policy to date
- Providing a vision for the municipality and outlining the strategy's connection to other relevant Council policy
- Outlining the scope, objectives and requirements to which the strategy applies.
- Defining the Sustainable Design in the Planning Process (SDAPP) framework and considerations for implementation
- Defining how Council will assess its own capital works projects, through a leadership approach
- Outlining the advocacy efforts required to engage the development community to implement Sustainable Design
- Outlining the key performance indicators associated with implementing the strategy and the proposed process for a whole of strategy review



St.Kilda Town Hall Extension, Finalist for Best Non Residential Development, 2010 City of Port Phillip Design and Development Awards.

Architects:Williams Boag

Features Include: Re-use of existing dwelling, active chilled beam air conditioning units, daylight and motion sensors for lighting, rainwater storage tanks, recycled timber.

Photography: John Gollings

1

INTRODUCTION



Skinnners Reserve, South Melbourne.

Architects: Phooey

Features Include: Re-use of existing containers, re-use of existing materials, passive solar orientation, effective shading devices.

Historically, the majority of Victorian development of private building stock has occurred without consideration of the complex relationships between the built environment and ecological systems. Building performance has been measured almost exclusively by minimum building code requirements, to the point where those are often perceived as the only target to aim for.

Growing awareness of environmental pressures in the past two decades has led to a widespread recognition of the importance of reducing the ecological impact of the built environment. Going beyond minimum requirements and focusing instead on best practice performance promotes design innovation and can be accomplished using existing technologies and economies of scale, while respecting heritage values.

It is the view of this Council that all tiers of government have a responsibility to address the environmental impacts of the built environment. Given its inner city locale, opportunities for renewal and growing housing demand, the City of Port Phillip (CoPP) is in a unique position to continue to provide leadership on the issue of sustainable design to its community, as well as to other Victorian Councils.

The City of Port Phillip has had a long history of encouraging sustainable design within its municipality. A study was commissioned by CoPP in 1999 to assess the capacity of the state and local planning policy frameworks to achieve high levels of sustainable design integration in the built environment. This resulted in the development of the original Sustainable Design Strategy endorsed by Council in October 2003 which was followed by the Sustainable Design Policy and updated Strategy endorsed in October 2006.

1.1 VISION

The original Sustainable Design Strategy (2003) was implemented through the use of the Sustainable Design Scorecard Residential, which was used on a voluntary basis by applicants during the period 2002 – 2005 to assess the sustainability of residential buildings. A review of the strategy in 2006 led to the development and endorsement of a formal council policy on the issue, and a revised strategy document. The 2006 Sustainable Design Policy and Strategy extended the focus to non-residential buildings, and since November 2005, the [Sustainable Tools for an Environmental Performance Strategy \(STEPS\) tool for residential developments](#) and the [Sustainable Design Scorecard \(SDS\) for non-residential development](#) have been council's preferred methods of sustainability assessment of building design.

The purpose of this revised Sustainable Design Strategy is to support Council's Sustainable Design Policy (2013) by providing a framework for achieving sustainable design outcomes within the municipality. This framework addresses specifically:

- The sustainable development of the municipality's built environment.
- The promotion of sustainability in the built environment to City of Port Phillip residents, to other relevant government bodies and to the design and construction industry.
- Council's own new and major refurbishment building works.

The vision is to create a more sustainable urban environment, comprised of architecture, landscapes, transport networks and infrastructure that are low carbon, water sensitive and resource efficient in both construction and operation.



Ross Place, South Melbourne, Best Sustainable Development, 2010 City of Port Phillip Design and Development Awards. Architects: Jackson Clements Burrows

Features Include: On site water retention and re-use, double glazing, sun shading and strategic integration of thermal mass, cross ventilation, generous bicycle parking and interactive digital building user guide.

1.2 CONTEXT

1.2.1 DEFINING SUSTAINABLE DESIGN

The CoPP recognises that built form has a significant impact on the greater environment and that most current common development practices are not environmentally sustainable in the long term. For the purposes of this strategy, CoPP defines sustainable design as an approach to building procurement and other urban development which works towards achieving zero net environmental impact.

This includes but is not limited to the following:

- Eliminating the use of non-renewable resources.
- Eliminating air, soil and water pollution.
- Creating healthy and accessible indoor and urban environments.
- Protecting and enhancing natural ecosystems and cycles.
- Supporting the conversion of 'waste' into useful resources.
- Creating a built environment that is resilient, flexible and adaptive to climate change.
- Supporting decentralised electricity and water systems.
- Supporting a move towards understanding and implementing 'positive development'
- Supporting sustainable modes of travel.



Jervois St, St.Kilda East, Best New Single Dwelling or Alteration, 2010 City of Port Phillip Design and Development Awards.

Architect: David Vernon

Features Include: Re-use of existing dwelling, passive solar orientation, effective shading devices, rainwater storage tank, solar hot water system, photovoltaic solar energy system.



Musée du quai Branly, Paris, France
Architect: Jean Nouvel
Landscape Architects: Gilles Clément and Patrick Blanc

1.2.2 BUILDING CLIMATE RESILIENCE

The global scientific consensus is that our climate is changing due to human-induced carbon emissions. This means we will have to design and build for increasingly uncertain and unpredictable future climate impacts on where and how we live.

For the City of Port Phillip, projected climate impacts such as increased flooding, hotter summers and less water availability will have a significant impact on our existing neighbourhoods and precincts, and the way buildings are designed, built and used in the future. This does, and will continue, to challenge and revise current and emerging legislative, planning and land use regulations and standards for some time to come.

To meet the challenges of a changing climate on our local built environment, the City of Port Phillip is committed to facilitating adaptive design to build local climate resilience. Adaptive design works with nature to gain climate clever solutions to living well on the coast, with increased flooding and rising temperatures.

To progress a local adaptive design approach, the City of Port Phillip encourages building design strategies such as:

- Harvesting rainwater for reuse
- Reducing peak stormwater flows and improving water quality to the Bay through the use of water sensitive urban design
- Building flood and storm resilient buildings
- Building for maximum thermal efficiency to maintain year-round indoor comfort
- Reducing local heat island impacts through climate clever building materials and the use of vegetation.

South Melbourne Market Roof
 Architects: Paul Morgan
 Features Include: 34kw Solar panels array
 and 500KL rainwater collection for re-use



1.2.3 RELEVANT COUNCIL POLICIES AND STRATEGIES

This document sits within an established strategic framework of council policies and strategies to deliver sustainable urban design and development.

Toward Zero

Toward Zero is the City of Port Phillip’s umbrella environment strategy. One of the key nine sustainability action areas within Toward Zero is Sustainable Urban Design and Development which has the following challenge for Council: The City of Port Phillip is committed to ensuring that all council buildings and facilities have minimal environmental impact

Challenge	Council	Community
GHG Emissions	Zero net emissions	50% per capita reduction
Water	70% net reduction	50% per capita reduction
Waste	80% net reduction	75% per capita reduction

Municipal Strategic Statement

The City of Port Phillip’s Municipal Strategic Statement (MSS) sets out Council’s strategic planning objectives for the city, underpinning the land-use and development provisions of the Port Phillip Planning Scheme.

The MSS is a detailed strategic framework for urban land use planning and development within the city. The MSS is structured around three key themes, one of which is Ecologically Sustainable Development. Strategies focus on:

- Responding to the issue of climate change;
- Fostering a liveable and attractive urban environment that uses fewer finite resources
- Encourage environmentally sustainable design in all new development

Proposed Scheme Apollo House 78-82 Acland St, St.Kilda.

Architects: Breathe Architecture

Features Include: Re-use of existing building, passive solar design, high thermal performance, thermal mass, hydronic heating, passive cooling, rainwater storage, gas boosted solar hot water, photovoltaic energy system, wind turbines and a communal green roof.



1.3 AIMS + OBJECTIVES

1.3.1 SUSTAINABLE DESIGN AIMS

The City of Port Phillip aims to foster a built environment that:

- Moves towards elimination of the use of non-renewable resources (such as fossil fuel based energy, mains water and materials)
- Moves towards the elimination of solid waste production
- Moves towards the elimination of air, soil and water pollution
- Creates healthy indoor environments
- Protects and enhances natural ecological systems and cycles

1.3.2 SUSTAINABLE DESIGN OBJECTIVES

To achieve these aims, the following objectives have been set in relation to sustainable design in the CoPP:

- Influence redevelopment within the municipality to facilitate the integration of sustainable design strategies into all new private building projects and significant renovation projects across the municipality.
- Advocate for sustainable design - to work with government, industry and the community towards an increasingly low impact built environment.
- Improve Council's own sustainable design performance - to facilitate the integration of sustainable design strategies into all of Council's own built environment development and major redevelopment works, in line with Council's environmental commitments.

2 SUSTAINABLE DESIGN POLICY (2013)

INTRODUCTION

The City of Port Phillip aims to be a proactive leader and an effective advocate for sustainable design and development within the municipality, including in undertaking its own building projects.

Port Phillip aims to ensure that buildings within the municipality are healthy to occupy, facilitate easy use of sustainable modes of travel, and are resilient to a changing climate.

VISION FOR A SUSTAINABLE BUILT ENVIRONMENT

The vision is the creation of a more sustainable urban environment, comprised of architecture, landscapes and infrastructure that are low carbon, water sensitive and resource efficient in both construction and operation; and is complemented by effective sustainable transport networks.

POLICY OBJECTIVES

The objectives of the Sustainable Design Policy are to:

- Implement the Sustainable Design Strategy
- To facilitate the adoption of sustainable design principles and construction techniques into all types of development
- Influence development to achieve improved sustainable outcomes
- To contribute to a more sustainable built environment
- Advocate for a more sustainable approach
- To work with the community, industry, and government towards an increasingly low impact built environment by communicating about and advocating for broad adoption of sustainable design

POLICY SCOPE:

The Sustainable Design Policy applies to:

- Planning permit applications for all new buildings and extensions to existing buildings over 50m² in floor area
- Council's own building projects for all new buildings, extensions to existing buildings and major refurbishments which alter at least 30%

of existing floor area

POLICY REQUIREMENTS

The Sustainable Design Policy requirements are:

- All development applications to comply with the Sustainable Design Assessment in the Planning Process (SDAPP) framework
- All development applications to submit either a Sustainable Design Assessment (SDA) or a Sustainable Management Plan (SMP) depending on the size of the proposed development
- All development applications to submit an assessment using an applicable Ecologically Sustainable Development (ESD) tool

SUPPORTING DOCUMENTS

The Sustainable Design Policy (2013) is supported this strategy which outlines a framework and actions for achieving the objectives of the policy.

KEY PERFORMANCE INDICATORS

Detailed Key Performance Indicators (KPIs) for the policy requirements are outlined in section 6 of this strategy. These will measure progress on the total number of applications which submitted sustainable design criteria, the total number of applications which satisfied Council's requirements for sustainable design and the total number of applications that used ESD tool assessments.

RESPONSIBILITY

Responsible Manager -General Manager Environment and Planning

Responsible Department - Sustainability

REVIEW

The Sustainable Design Policy (2013) will be formally reviewed four years from the date of its adoption.

3

IMPLEMENTING A SUSTAINABLE URBAN ENVIRONMENT

The City of Port Phillip aims to encourage the sustainable development of the municipality's built environment. The opportunities for Council to influence development occur when a planning or building permit is sought. While the deregulation of the building permit process means that Council no longer assesses all building permit applications, issues such as lot size, heritage and other overlays result in a significant proportion of the municipality's development projects requiring a planning permit.

K2 Raleigh St Apartments, Windsor, Finalist for Best New Development 5 Units or more, 2007 City of Port Phillip Design and Development Awards.

Architects: DesignInc.

Features Include: Passive solar orientation, effective shading devices, effective cross flow ventilation, double glazing, thermal mass, rainwater storage tanks, photovoltaic solar energy system.

Photography: David Wierzbowski



3.1 DEFINING THE SCOPE OF ELIGIBLE APPLICATIONS

The strategy applies to all planning permit applications submitted for the purpose of constructing a building.

This includes the following residential buildings (including all new buildings or extensions with an increased floor area of 50m²)

- Detached house – a free standing dwelling, may have some external walls located on property boundaries, but not attached to any other building.
- Attached dwelling, row house or town house – one of two or more dwellings in a side-by-side configuration with shared party walls and individual ground level entrances.
- Multiunit development – new, multi storeyed structure, with predominantly centralised car parking and internal access to most apartments.
- Addition of a roof top apartment – a new structure above the existing top floor of an existing building where there is an increase in area of 50m².
- Residential component of a mixed use development – one or more dwellings that are part of a new or refurbished building, where there is also a commercial component.

It also includes the following non-residential (including all new buildings or extensions with an increased floor area of 50m²):

- Commercial / office.
- Retail / food premises.



Szencorp Building, Albert Rd, South Melbourne, Finalist for Best Contribution to Sustainable Development – Large Scale, 2005 City of Port Phillip Design and Development Awards. Architects: Synman Justin Bialek (SJB)

Features Include: Passive solar orientation, effective shading devices, daylight and motion sensors for lighting, HVAC and security control, ceramic fuel cells for power generation, gas powered air conditioning. Australia's first 6 Star Green Star - Office Design v1 Certified Rating for a refurbishment by the Green Building Council of Australia.

- Industrial / laboratory.
- Community / public building – including civic, educational, religious, community, health or similar uses.
- Retail / commercial component of a mixed use building – non-residential component of new or refurbished building, where there is also a residential component.

Categories of planning applications not listed above do not require a sustainable design assessment due to the scale and nature of these applications.

3.2

SUSTAINABLE DESIGN ASSESSMENT IN THE PLANNING PROCESS (SDAPP)

It is the City's belief that the integration of sustainable design provisions into the planning system should occur first and foremost at the state level. As a comprehensive approach to sustainable design is yet to be addressed by the state government, council continues

to encourage sustainable development outcomes in the built environment through the application of the CoPP Sustainable Design Policy (2013), the Sustainable Design Strategy and Sustainable Design for Council Buildings.

The planning process currently provides the greatest opportunity for Council to influence the sustainable design performance of new development. Council has implemented Sustainable Design Assessment in the Planning Process (SDAPP), a voluntary program which encourages applicants to address sustainable design issues at the planning permit stage, and assesses eligible planning applications against a series of environmental targets. This program involves the City of Port Phillip by:

- Increasing pre-application consultation between planning applicants and Council to encourage applicants to address sustainability in the early phases of design where the greatest outcomes can be achieved.
- Requesting, either at a pre-application meeting, or in addition to further information requests, that applicants submit a [Sustainable Design Assessment \(SDA\)](#) or a [Sustainable Management Plan \(SMP\)](#) depending on the size of the development, that outlines any proposed sustainable

design initiatives that will improve the overall performance of the development above minimum legal requirements, with reference to, but not limited to the following key ten environmental categories:

[Indoor environment quality](#)

[Energy efficiency Water](#)

[Efficiency Stormwater](#)

[Management Building](#)

[Materials](#)

[Transport](#)

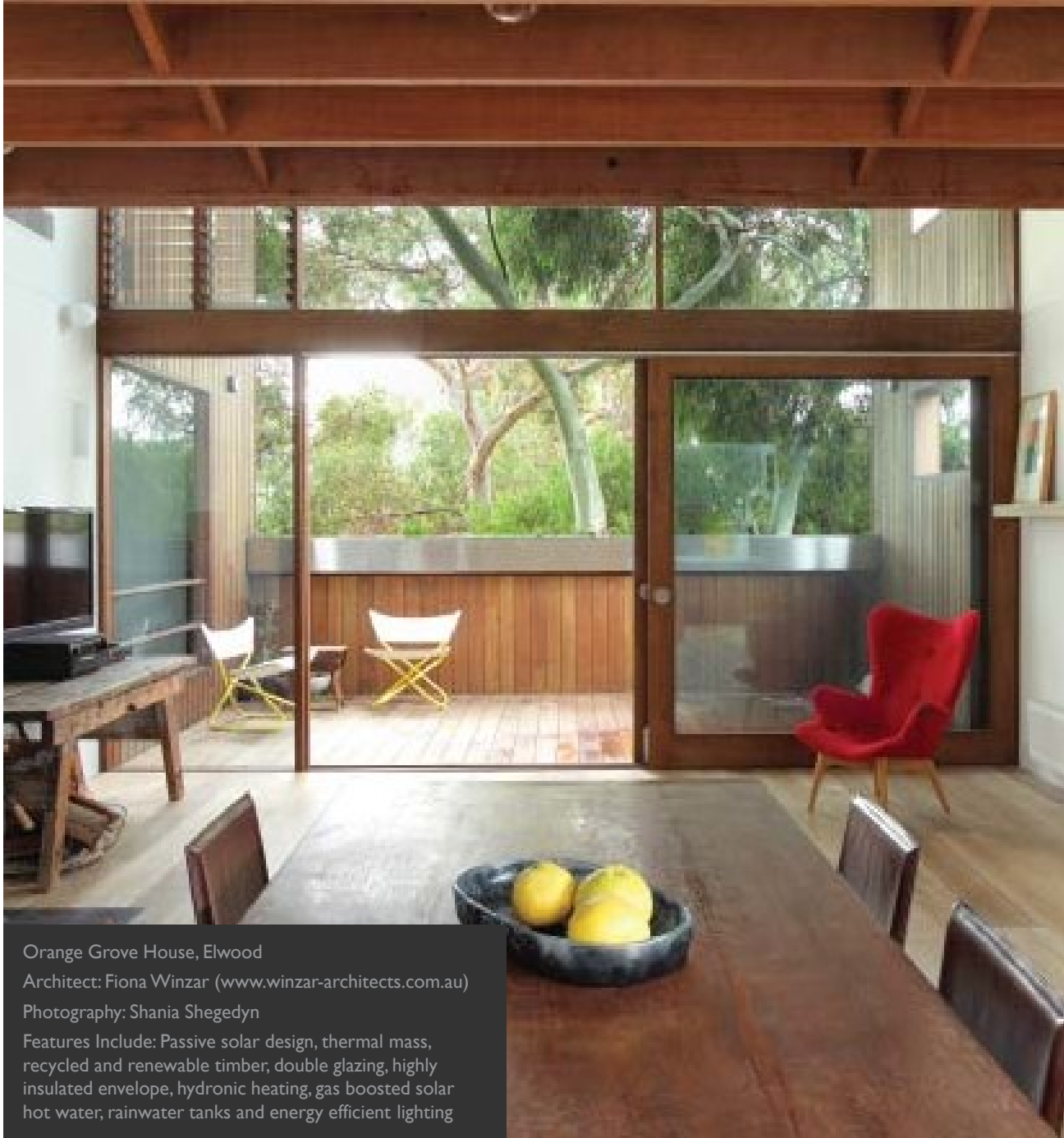
[Waste management](#)

[Innovation](#)

[Urban ecology](#)

[Ongoing building and site management](#)

- To support the claims stated in the SDA or SMP, applicants should provide an assessment of the proposed development with an applicable best practice Ecologically Sustainable Development (ESD) assessment tool, depending on the size of the development. Green Star, Sustainable Tools for Environmental Performance Strategy (STEPS) or the Sustainable Design Scorecard (SDS) are considered applicable tools by the CoPP.
- Providing ongoing one-on-one advice during the design and application stages, including direct liaison between the internal assessor (Planning Officer and/or Sustainable Design Architect/Engineer) and the applicant if required.



Orange Grove House, Elwood
 Architect: Fiona Winzar (www.winzar-architects.com.au)
 Photography: Shania Shegedyn
 Features Include: Passive solar design, thermal mass, recycled and renewable timber, double glazing, highly insulated envelope, hydronic heating, gas boosted solar hot water, rainwater tanks and energy efficient lighting

- Ensuring an effective process for the sustainability assessment of development applications by internally referring relevant development applications to the Sustainable Design Architect/Engineer or other appropriate person who will assess the level of performance indicated in the SDA or SMP in the context of the application and determine if it is consistent with the objectives of the Sustainable Design Policy 2013. (Refer Appendix 1)
- When deemed suitable, endorse the [SDA or SMP](#) in its entirety if and when the application receives a permit, with it being appropriately referenced as a permit condition

The SDAPP program also involves an active educative process by council and council staff including:

- Training planning staff in environmental issues in general, and specifically in the use of the STEPS and SDS tools;
- Regular briefings for Councillors;
- Provision of regular public training sessions on using the assessment tools; and
- Provision of clear, easily accessible sustainable design information to industry members and the general community.

LARGE

Residential:
New development for 10 or more dwellings
Non-Residential
1 New development of a building with a gross floor area of more than 1000m², or
2 Extension to an existing building with a gross floor area greater than 1000m²

Prepare Report

Provide a detailed description on how the application addresses the 10 key sustainable building categories

SMP

Conduct Tool Assessment
To assess the design using an applicable Ecologically Sustainable Development (ESD) tool.
Suggested Tools: STEPS, SDS and Green Star

Submit with your planning application

ESD Assessment by Council

Other relevant referrals
(eg Heritage, Urban Design, Engineering, external authorities)

Council decision on your planning application

MEDIUM

Residential:
1 New development of 1-9 dwellings or
2 Extension to an existing building greater than 50m²
Non-Residential
1 New development of a building with a gross floor area between 50m² and 1000m², or
2 Extension to an existing building with a gross floor area between 50m² and 1 000m²

Prepare Report

Provide a succinct description on how the application addresses the 10 key sustainable building categories

SDA

Conduct Tool Assessment
To assess the design using an applicable (ESD) tool except for extensions where added building volume is less than 50% of existing building volume.
Suggested Tools: STEPS and SDS

Submit with your planning application

ESD Assessment by Council

Other relevant referrals
(eg Heritage, Urban Design, Engineering, external authorities)

Council decision on your planning application

SMALL

Residential:
Extension to an existing building where additional floor area is below 50m²
Non-Residential
1 New development of a building with a gross floor area of less than 50m², or
2 Extension to an existing building with a gross floor area below 50m²

Obtain

Councils ESD advice

Consider and submit with your planning application

Discussion of referral responses

Council decision on your planning application

3.3

SUSTAINABLE DESIGN ASSESSMENT TOOLS

Since 2005 the preferred method for assessing the environmental performance of planning applications, and to assist in the completion of SDA's or SMP's is to use one, or a combination of three tools:

- [Sustainable Tools for an Environmental Performance Strategy \(STEPS\)](#) for residential developments, or
- [Sustainable Design Scorecard \(SDS\)](#) for non-residential developments, or
- Green Building Council of Australia (GBCA) suite of Green Star tools including [Green Star](#) Multi unit Residential, Education, Industrial, Healthcare, Office, Retail or Public Buildings, or
- A combination of the three in the case of mixed use developments.
- Use of the tools is not required for extensions to existing dwellings where the volume of the proposed extension does not exceed 50% of the volume of the existing dwelling.

At the time of publication these tools were available at:

STEPS: <http://www.sustainablesteps.com.au/>

SDS: <http://www.port Phillip.vic.gov.au/sds.htm>

Green Star: <http://www.gbca.org.au/>

These tools assess buildings using a number of key environmental criteria. For each environmental issue, a minimum target is set. A range of design strategies are listed, allowing applicants to determine the best method for achieving the targets.



By using the [STEPS](#) tool, the developers of residential buildings are strongly encouraged to achieve sustainable design outcomes within each of the following categories:

[Energy efficiency](#)

[Energy peak demand](#)

[Water use](#)

[Stormwater quality](#)

[Materials](#)

[Bicycle parking provisions](#)

[Collection of waste and recyclables](#)



By using the [Sustainable Design Scorecard](#), the developers of non-residential buildings are strongly encouraged to achieve sustainable outcomes within each of the following categories:

[Energy efficiency](#)

[Transport](#)

[Water use \(including stormwater quality\)](#)

[Waste management](#)

[Materials](#)

[Indoor environment quality](#)

[Innovation in sustainable design](#)

Council aims to continue to develop the Sustainable Design Scorecard and support the development of STEPS until such time as they are replaced by a state-wide or national equivalent and/or are deemed to no longer be useful.



New Residence, Elwood.

Architect: Sunpower Design

Features Include: Passive solar design, effective shading, thermal mass, renewable and recycled materials, double glazing, highly insulated envelope, gas boosted solar hot water, rainwater tanks and energy efficient lighting



By using the **Green Star** tools, applicants of residential (10 dwellings or more) and non-residential buildings (new buildings greater than 1000m² or extensions greater than 1000m²) are encouraged to demonstrate compliance in achieving sustainable design outcomes in the following categories:

Management

Indoor environment quality

Energy

Transport

Water

Materials

Landuse and ecology

Innovation

Applicable applications that are to be assessed with the Green Star suite of tools are not required to gain certification by the Green Building Council of Australia (GBCA). The purpose of this requirement is to demonstrate compliance with each of the environmental categories.

3.4

SDAPP FACT SHEETS

As part of the Sustainable Design Assessment in Council's Planning Process, Council has produced a set of fact sheets for each of the 10 key Sustainable Building Categories. The fact sheets provide an overview of the SDAPP process, detailed information, links to resources and clarify Council's best practice standards for each of the categories.



1. Indoor Environment Quality

Objective: to achieve a healthy indoor environment quality for the wellbeing of building occupants.

Examples of design decisions:

- Daylight
- Thermal comfort
- Natural ventilation

2. Energy Efficiency

Objective: to ensure the efficient use of energy, to reduce total operating greenhouse emissions and to reduce energy peak demand.

Examples of design decisions:

- Efficient shading
- Building fabric enhanced above the minimum Building Code of Australia (BCA) requirements
- Efficient heating and cooling services
- Onsite generation of energy

3. Water Efficiency

Objective: to ensure the efficient use of water, to reduce total operating potable water use and to encourage the appropriate use of alternative water sources.

Examples of design decisions:

- Use efficient fixtures and fittings
- Avoid the use of mains water for landscape irrigation
- Re-use water (e.g. greywater)

4. Stormwater Management

Objective: to reduce the impact of stormwater run-off, to improve the water quality of stormwater run-off, to achieve best practice stormwater quality outcomes and to incorporate the use of water sensitive urban design, including stormwater re-use.

Examples of design decisions:

- Minimise watercourse pollution
- Maximise stormwater capture
- Maximise on-site rainwater re-use (e.g. for flushing toilets and irrigation)





5. Building Materials

Objective: to minimise the environmental impacts of materials used by encouraging the use of materials with a favourable lifecycle assessment.

Examples of design decisions

- Embodied energy of materials
- Use of materials with recycled content
- Future recyclability of materials

6. Transport

Objective: to minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.

Examples of design decisions:

- Providing convenient and secure bike storage
- Providing access to showers and lockers at work
- Green Travel Plan for residents, visitors and staff.

7. Waste Management

Objective: to ensure waste avoidance, and reuse and recycling during the construction and operation stages of development.

Examples of design decisions:

- Preparation of a construction Waste Management Plan
- Adoption of a demolition and construction material recycling target.
- Preparation of an operation Waste Management Plan.

8. Urban Ecology

Objective: to protect and enhance biodiversity and to encourage the planting of indigenous vegetation.

Examples of design decisions:

- Maintaining / enhancing the site's ecological value
- Creating resident amenity
- Encourage biodiversity areas.

9. Innovation

Objective: to encourage innovative technology, design and processes in all development, so as to positively influence the sustainability of buildings.

Examples of design decisions:

- Significant enhancements of best practice sustainable design standards
- Introduction of new technology
- Good passive design approach.

10. Construction and Building Management

Objectives: to encourage a holistic and integrated design and construction process and ongoing high performance.

Examples of design decisions:

- Building User's Guide that explains a building's sustainable design principles
- Preparation of an operation Environmental Management Plan
- Contractor has valid ISO14001 (environmental management) accreditation

3.5 MAKING HERITAGE EVEN MORE SUSTAINABLE

Over 80% of the City of Port Phillip is covered by some degree of heritage control. Council recognises the significant value the community places on heritage and the role these heritage controls play in preserving this. However it is important that these do not unnecessarily impede the creation of a more environmentally friendly built environment.

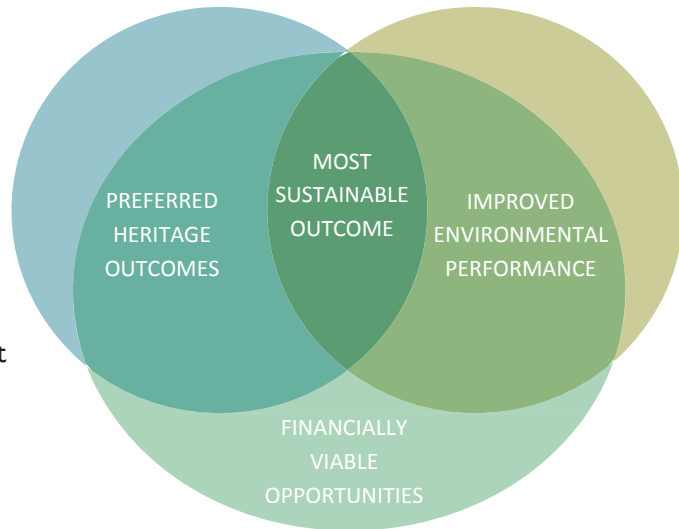
Council believes heritage considerations and improved environmental performance to be mutually supportive and must be kept in careful balance if the most sustainable outcomes are to be achieved.

However circumstances may arise where the need to improve a building's environmental performance will not be consistent with the relevant heritage controls. In these circumstances, a balanced outcome must still be achieved. Generally, where heritage controls would not be met Council would only allow the environmental improvements if all other reasonable alternatives have been explored.

Each proposal is considered on its merits and Council must take into consideration all relevant planning controls associated with heritage.

Council acknowledges the significant role that heritage controls can play in the creation of a more sustainable built environment, including:

- Savings in embodied energy through retention of existing structures and onsite materials
- Reduced construction time through adaptation of existing structures
- Reduced demand for emissions-intensive non-renewable materials
- Reduced waste and often improved thermal mass
- Significantly longer building life compared to more contemporary methods of design and construction



GETTING THE BALANCE RIGHT

The most sustainable outcomes are achieved when heritage, environmental and financial considerations are kept in balance.



Jervois St, St.Kilda East, Best New Single Dwelling or Alteration, 2010 City of Port Phillip Design and Development Awards.

Architect: David Vernon

Cyclist on foreshore bike path in front of City of Port Phillip toilet block. by Gregory Burgess Architects



3.6 THE ROLE OF INCENTIVES

3.6.1 WAIVING OF PLANNING PERMIT APPLICATION FEES

To provide an incentive for their inclusion, and as part of the City of Port Phillip's commitment towards environmental and social sustainability the planning permit application fee typically associated with the following sustainable items, or combination there of, will no longer be required:

- Solar Hot Water System
- Photovoltaic Panels
- Rainwater Tanks
- Small-Scale Wind Turbines
- Upgrading of Existing Glazing
- Adjustable/Fixed Awnings with no advertising
- Skylights
- Grey Water Systems (approval also required from Council's Health Services Unit)
- Bicycle Storage
- Removal of Disused Car Space and/or Crossover
- Initiatives to Improve Disabled Access

Additionally for applications of proposed building works under \$10,000.00 that include any of the listed items above will also no longer require a fast track application fee.

Note: To receive approval each application must be consistent with the Port Phillip Planning Scheme, including any relevant

3.6.2 SUSTAINABLE TRANSPORT - CAR PARKING RATES

The provision of car parking is an additional planning related issue of relevance to sustainable built environments. Council supports sustainable transport initiatives, and will consider reduced car parking requirements for a development application, if that application is accompanied by both a comprehensive sustainable transport plan for the development, and a comprehensive Sustainable Design Assessment or Sustainable Management Plan outlining the improved environmental performance of the proposal. The CoPP's current car parking rates for various land uses across the municipality in light of empirical evidence and with reference to Council policies relating to sustainable transport options are outlined in the following table:

Diagram 4 – Sustainable Transport and Onsite Parking

Land Use	Standard Planning Scheme Rate (spaces)	Empirical Rate (spaces)	Sustainable (reduced) Rate (spaces)	Necessary conditions for sustainable rate
Dwelling				Requirements to obtain sustainable rate (upper limit)
1 bedroom	1 each	1 each	0-0.8 each	With or no more than 200 metres walk to edge of an activity centre
2 bedroom	1 each	1 each	1 each	
3 bedroom	2 each	2 each	2 each	
				No more than 200 metres to fixed rail public transport
				No more than 400 metres to supermarket
				Strict control of on-street parking in surrounding streets
				No resident permits for future owner/occupants
				Provision of motor scooter/motorbike parking on site
				Small dwellings only
				Additional requirements to obtain sustainable rate (lower limit)
				Participation in car share scheme or other similar initiatives
				Be located within a mixed-use development or in an employment precinct
				Other contributions to sustainable transport infrastructure services.
				Other initiatives to reduce usage and/or ownership of motor vehicles
Office	3.5/100m ²	3.5/100m ² (unshared) 3.0/100m ² (shared)	2.0 - 3.0 /100m ² (unshared) 2.0 - 2.8 /100m ² (shared)	
Shop				
Specialty Shop	8.0/100m ²	4.0/100m ²	N/A	N/A
Supermarket	8.0/100m ²	4.0/100m ²		
Restaurant	0.6 per seat	0.3 per seat	N/A	N/A

Note: Approval of reduced car-parking requirements is at the full discretion of Council, with approval determined on a case-by-case basis and in accordance with the car parking provisions of the Planning Scheme

4

ACHIEVING BEST PRACTICE OUTCOMES IN COUNCIL PROJECTS

4.1 DEFINING THE SCOPE OF ELIGIBLE CAPITAL WORKS PROJECTS:

The CoPP has an established methodology for assessing the potential for sustainability initiatives in all its capital works programs – including infrastructure, landscaping, urban renewal and building works. This section refers only to the buildings component of the CoPP capital works program and includes new development, extensions and major refurbishments.

New developments, extensions and major refurbishment buildings refer to all capital works building refurbishment projects which cover a minimum alteration of 30% of gross floor area and have a total construction budget of over \$200,000. These typically include the following:

- Commercial / office
- Retail / food premises
- Industrial / laboratory
- Community / public building – including civic, educational, religious, community or similar uses

- Retail / commercial component of a mixed use building – non-residential component of new or refurbished building, where there is also a residential component.
- Extensions to any of the above – this includes projects where there is an increase in gross floor area.

For all minor refurbishments and maintenance council building projects which cover less than a 30% change to gross floor area and are below a construction budget of \$200,000, **please refer to the City of Port Phillip’s Sustainable Building Improvement Plan and Capital Works ESD Toolkit.**

4.2 APPLYING SUSTAINABLE DESIGN IN COUNCILS CAPITAL WORKS PROGRAM

Council aims to achieve excellent sustainable design outcomes in every new development and major refurbishment of any Council building or facility it commissions or undertakes. Whether these building projects require a planning permit or not, Council is committed to undertaking a sustainable design assessment of the proposed development, to ensure that it achieves the targets set out in the **Toward Zero Sustainable Environment Strategy**, that it meets Council’s expectations for the municipality and in selected cases applies for best practice sustainable buildings.

4.3 SCOPING SUSTAINABLE DESIGN

Phase 1a – Identify Need

This initial phase of a project determines ‘why’ the project exists and broad parameters including drivers, objectives, benefits and constraints are established. This is the right phase for the Project Sponsor to establish what level of ESD is required for the project. This is set out in figure 3 and specifies an applicable assessment tool and score for the project. The Project Sponsor would refer to table 3, utilise the ESD Toolkit and consult with the Sustainable Design Architect to ensure that relevant ESD considerations and their costs are included upfront.

Phase 1b – Develop Scope

For ESD to be effectively integrated into Council’s capital works program it will need to be considered at the project scoping stage. This will require consideration from Project Sponsors, Project Managers and other brief writers to indicate the nominated assessment tool and score required for the project and to also allow for some of the ESD requirements in the project budget.

At minimum of 10% of total project construction costs should be allocated as an ESD budget for the project. Council’s Procurement Policy allows the provision of up to 10% additional ESD premium on the conventional cost of a project; in other words, up to a 10% cost increase on the total project to fund the key sustainability components. In summary, the premium would cover the additional cost of a particular material or project component that is considered a sustainable alternative to the conventional option (for instance: the cost differential between standard glazing and double glazing).

Some ESD features may incur additional project costs although they may be the better choice of two evenly priced alternatives or be a far more effective (cost and environmental) way of designing the building (e.g. solar passive design).

Some ESD features will incur larger up front costs however they should be considered from a life cycle costing perspective as they may cost less to operate, be easier to maintain and provide a better return on investment throughout the life of the building.

Phase 2a – Design / Options Analysis

Briefs for external designers and consultants (architectural, building services, etc) should communicate the nominated scoped level of ESD for the project.

The project budget should be protected as a non negotiable item during cost savings and value management sessions as the ESD budget should be considered as an investment that will return benefits to Council over the life of the building.

If alternative options are required they should be scoped as alternative ESD options.

Phase 2b – Plan

At this stage in the process it is critical to ensure that the ESD requirements have been allowed for in the contract documentation (consultant drawings and specifications) stage so it can be accounted for throughout the tender process.

Phase 3 – Implement

During the construction stage the nominated party (internal or external) conducting contract administration are responsible for ensuring that the ESD requirements that have been documented are being met by the construction contractor.

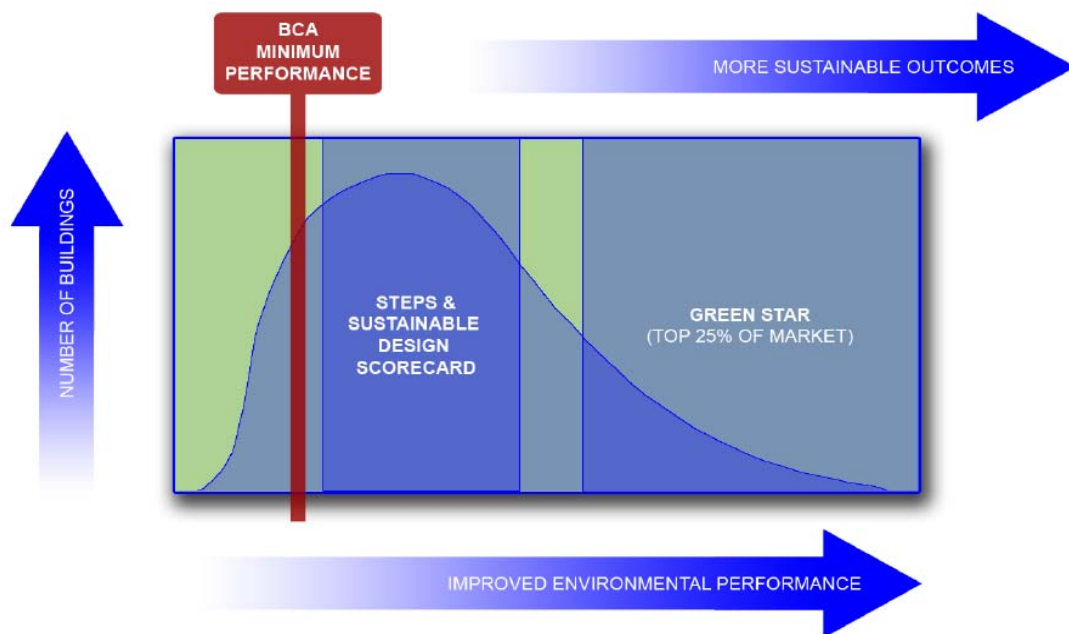
Phase 4+5 – Handover / Close and Evaluate

The handover phase is critical for allowing the building users and occupiers to gain an understanding of how the ESD features in the building operate. This is also an important stage for building commissioning and tuning to take place that will ensure ESD features are operating as they have been designed to do.

4.4 ASSESSING SUSTAINABLE DESIGN

There are a variety of ways to assess the environmental performance of buildings. Recent amendments to the Building Code of Australia have increased the standard for energy efficiency within all types of buildings which is setting a standard mandatory benchmark. However this is the only aspect of sustainable design that the code assesses. There are a range of tools available within the market place which cover a greater range of environmental performance targets.

Figure 2 – Sustainable Design Industry Assessment Methodologies



For private applications the City of Port Phillip has adopted the SDAPP process to encourage sustainable design outcomes in the built environment (refer to Sustainable Design Strategy).

In order to show leadership within the Port Phillip community as well as more broadly within the local government sector and industry, council will set the SDAPP process as a minimum benchmark for all of councils building works. Council will also strive for best practice and will implement the use of the Green Star Assessment Program created by the Green Building Council of Australia, and where this is not applicable council will use the Sustainable Design Scorecard.

Council building works that require a planning permit

All of council's capital works building projects that are in excess of \$1,000,000 require planning permission and typically would have ESD consultants as part of the project design team. In this instance the project would be referred to the Sustainable Design Architect through the Statutory Planning process.

Council building works that do not require a planning permit

For projects below \$1,000,000 where planning permission is not typically required or for projects where ESD consultants may not be engaged on the project, the Sustainable Design Architect will assist the project team in preparing documentation for sustainable design assessment. As a minimum a Sustainable Design Assessment (SDA template – refer to appendix) will be required to demonstrate how the project has responded to each environmental category outlined in the Environmental Performance Requirements section.

4.5 ENVIRONMENTAL PERFORMANCE CONSIDERATIONS

The City of Port Phillip considers the following environmental targets to be crucial areas where projects can address specific targets set out in relevant policies and strategies, and to also ensure that developments are collectively reducing their impact on different areas of the environment.

Energy:

Minimum Requirement – BCA Compliance + 10% (Section J for Class 2 – 9 Buildings)

Design considerations - Good solar orientation, fixed eaves/shading devices to north facing glazing and operable shading devices to east and west facing glazing, energy efficient lighting, renewable energy systems, energy efficient HVAC systems, energy efficient hot water systems, energy efficient appliances, and building tuning and commissioning.

Best practice energy consumption would be a building that is hyper-efficient and capable of producing energy to exceed its demand (ie. building is a net-exporter of energy and this can be used to offset GHG emissions from streetlights). As an interim measure, council should design buildings where, on an annual basis, the energy produced by the building is equal to or less than the energy consumed from the energy grids. Energy modelling should also be completed with calculation of running costs of various designs, operations and appliances.

Water

Minimum Requirement - Water efficient appliances within one star of the best available WELS (Water Efficiency Labelling Scheme) rated tap ware, toilets and showers.

Design considerations – Rainwater storage tanks for re-use, water efficient appliances, fixtures and fittings, water efficient landscaping, grey water treatment/storage systems.

Stormwater

Minimum Requirement – To achieve minimum requirements for treating and filtering stormwater in accordance with Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO 1999).

Design considerations – Water Sensitive Urban Design (WSUD) including detention through on-site filtration, diversion from stormwater system, treatment on site prior to release, rain gardens, swales and other stormwater treatment measures.

Betty Day Community Centre
Architects: K20 Architecture



Waste

Minimum Requirement – For construction phase: Implement a Waste Management Plan (WMP), retain waste records and submit quarterly reports to the building owner (Council) and target 80% by mass of all demolition and construction waste is to be re used or recycled.

For operational phase: Dedicated storage areas for the separation, collection and recycling of waste which can be easily accessed by all building occupants and recycling contractors.

Design considerations – Extent of retaining existing structures, re-use of existing materials (re-cycling where required), Waste Management Plans for demolition and construction phases, allocation of space(s) for general waste, recycling and compost/green waste for operational phase.

Materials

Minimum Requirement – To ensure that a significant percentage of materials specified in projects are either re used, recycled or are produced in an environmentally method and are certified.

Design – Extent of retaining existing structures, re-use of existing materials (re-cycling where required), more environmentally friendly material types that are certified and/or justified as to what processes are involved in classifying the material as environmentally friendly. Materials can be informed by Ecospecifier, Good Environmental Choice Australia (GECA) and other recognised independent certifiers.

Indoor Environment Quality

Minimum Requirement – Comply with BCA requirements for natural daylight and natural ventilation to habitable spaces. Ensure the quality of indoor air is preserved by specifying materials with minimal air pollutants and off gases.

Design – Providing direct access to natural daylight, providing direct access to natural ventilation, selecting low VOC paints and carpets, low to no formaldehyde emitting joinery including medium density fibreboard (MDF), plywood, and particleboard, and provisions for indoor planting.



City of Port Phillip Toilet Block
Architects: Gregory Burgess Architects

Transport

Minimum Requirement – **Bicycle Parking:** Provide secure bicycle storage spaces for at least 5-10% of building occupants based on 1 person per 15m² of gross floor area.

Bicycle Facilities: Provide end of trip change facilities (lockers and showers) for every 10 bicycle spaces.

Car Parking: Reduce the need for on site car parking in accordance with the City of Port Phillips Sustainable Parking Rates, refer to the Sustainable Design Strategy.

Design – Number and location of onsite bicycle parking spaces and secure lockup facilities, appropriate change facilities, and a reduction in on-site car parking.

Biodiversity

Design – use of indigenous plants in landscaping, courtyards, green roofs and walling.

Innovation

Design – Inclusion and ‘locking in’ of innovative sustainable design solutions

4.6 ASSESSING ENVIRONMENTAL PERFORMANCE OBJECTIVES

The following table illustrates how council will assess its range of capital works building projects by building type.

Figure 3 – Sustainable Design Assessment Tools for the City of Port Phillip

Project Type			Approval Process				Rating Tools					
			Cap Works Type	PA	SDA	SMP	Green Building Council Australia Green Star			City of Port Phillip Sustainable Design Scorecard (SDS)		
Characteristics (comply with one)												
Size(SML)	Budget	Complexity					Stars	Score	Grade	Score	Grade	
Category	New Buildings + Extensions to Existing Buildings											
	S<250m ²	<\$1MIL	Simple	New	No	Yes	No	4 Star	45-59	Best Practice	114-160	Average
	M>250-1000m ²	\$1-3 MIL	Moderate	New	Yes	No	Yes	5 Star	60-74	Aus Excellence	161-210	Best Practice
	L>1000m ²	>\$3MIL	Complex	New	Yes	No	Yes	6 Star	75+	World Leader	211+	Excellent
	Refurbishments to Existing Buildings											
	S<30% GFA	<\$200K	Simple	Renewal	No	No	No	No – Refer BIP + ESD Toolkit			No – Refer BIP + ESD Toolkit	
	M>30% - 70% GFA	>\$200K-1MIL	Moderate	Renewal	No	Yes	No	4 Star	45-59	Best Practice	114-160	Average
	L>70% GFA	>\$1MIL	Complex	Renewal	Yes	Yes	Yes	5 Star	60-74	Aus Excellence	161-210	Best Practice
	<p>Characteristics - The capital works project will need to be applicable to one of either the size, budget or complexity to be considered in each category. As ESD input will be required at the early scoping stage of a project, not all of the characteristics will be known. Also some projects may not be satisfying one characteristic (ie a shed over 250m²) however it would be best classed as a small building because it is considered a simple project. The category of the building can be agreed to by the Sustainable Design Officer and the Project Sponsor at the scoping stage of the project.</p>											
	<p>Complexity – The complexity category is provided to be a final indicator for each project type. The following is an indication of typical capital works projects that fall under each complexity category.</p>											
Simple	Toilets, small pavilions kiosks / ticket boxes, depot buildings, car parks, larger sheds and non-habitable buildings or structures											
Moderate	Pavilions, childcare and maternal and child health centres, aged/health care, senior citizens centres, neighbourhood houses, community centres/halls, office buildings											
Complex	Libraries, aquatic recreation centres, sports stadiums, larger offices buildings, town halls, larger community centres, arts and entertainment centres, and laboratories.											
Cap Works Type – Type of Capital Works building project. New, Renewal or Upgrade.												
PA – Planning Approval, mandatory for all capital works building projects over \$1MIL												
SDA – Sustainable Design Assessment, a one page statement indicating how the project responds to ESD environmental categories. Suitable for projects under \$1MIL												
SMP – Sustainability Management Plan, a more comprehensive response to ESD suitable for moderate and complex building projects over \$1MIL. Typically prepared by ESD consultants.												
Green Star – All projects should aim to achieve Green Star benchmarks where a Green Star rating tool is available for the building type, and demonstrate how these benchmarks have been achieved. Where a Green Star rating tool is not available or is in PILOT phase for the building type, an SDS assessment should be done instead. 'Flagship' projects should aim to achieve either a 5 or 6 Star Green Star certified rating.												
SDS – City of Port Phillip's own sustainable design scorecard for non-residential buildings. The scorecard is intended to be used where there is not a suitable Green Star assessment tool or where the Sustainable Design Officer and Project Sponsor deem it to be more suitable. As a minimum each capital works building projects should achieve an SDS rating.												

5

ADVOCATING FOR A MORE SUSTAINABLE APPROACH

The City of Port Phillip aims to continue its advocacy in promoting sustainability in the built environment to its communities, to other relevant government bodies and to the design and construction industry.

Achieving sustainability outcomes in the built environment extends beyond encouraging sustainable design in development projects. Within the municipality's existing building stock, occupants' behaviour patterns account for the majority of the built environment's ecological footprint. For that reason Council actively engages both the general community and businesses in programs seeking to reduce the impact of the existing built environment by encouraging behaviour change towards energy and resource efficient practices.

Elwood Green, Ormond Rd, Elwood.

Architects: Crosby Architects, MA

Architects ESD Consultants: Ark Resources

Features Include: Passive solar orientation, wind turbine, solar hot water system, photovoltaic solar energy system, rainwater storage tanks and thermal mass.



Market St, South Melbourne
Architects: Carabott Holt
Features Include: Effective shading, thermal mass, renewable and exposed structural materials



5.1 EDUCATION AND ENGAGEMENT

5.1.1 COMMUNITY

The CoPP is committed to encouraging local development, renovations and retrofits that achieve high standards of resource efficiency and climate resilience through sustainable design. To progress this agenda, council actively promotes available assistance and tangible examples of sustainable design through the following information pathways:

- SDAPP Factsheets for the SDAPP process – www.portphillip.vic.gov.au/sdapp-fact-sheets.htm
- Sustainable Design Case Studies – www.portphillip.vic.gov.au/sustainable_case_studies.htm
- Community Environment E-hub website for design, DIY, good links and resources – www.enviroehub.com.au
- Sustainable design workshops (see council's Enviro-Events calendar on the E-hub) and forums on rebates – www.enviroehub.com.au
- Open house showcase of local sustainable buildings – local houses, public and private buildings that showcase innovative and relevant sustainable design solutions. To join the tour for Sustainable Houses Day go to www.sustainablehouseday.com/
- World Green Building Week – A week long celebration of green buildings which involves presentations, competitions and I on I design sessions aimed at promoting sustainable design to the Port Phillip community

5.1.2 DESIGN AND CONSTRUCTION INDUSTRY

The CoPP aims to continue to actively promote the benefits of a sustainable approach to building procurement to the design and construction industry through actions such as:

- Publishing articles regarding the Sustainable Design Assessment in the Planning Process (SDAPP) program.
- Presenting at conferences and industry forums on council's approach to the advocacy and implementation of sustainable design strategies in the built environment.
- Recognising successful case studies through the sustainable design category of the Design and Development Awards.
- Disseminating the Sustainable Design in the Planning Process (SDAPP) Fact Sheets
- Sharing relevant information and experience on the SDAPP program and the two sustainability assessment tools with other local Councils, through the Council Alliance for a Sustainable Built Environment (CASBE) network.

5.2

PARTNERSHIPS

5.2.1 COUNCIL ALLIANCE FOR A SUSTAINABLE BUILT ENVIRONMENT

Since 2005, the CoPP has been actively engaged with other Victorian local government organisations regarding sustainability in the built environment, which has culminated in the formal establishment of the Council Alliance for a Sustainable Built Environment (CASBE).

“CASBE (formerly the Victorian Participating Councils Group) is a collection of Victorian municipal governments committed to the creation of a more sustainable built environment both within and beyond their municipalities. The Alliance originally formed around the joint implementation, promotion and support of the Sustainable Design Assessment in the Planning Process (SDAPP) program.

The CASBE mission is “to provide a coordinated program to develop formal and consistent approaches to ESD, with a primary focus on the planning process.”

Council aims to maintain membership of and support to CASBE and to continue to encourage other local governments to participate in the CASBE network and the Sustainable Design Assessment in the Planning Process (SDAPP) program.

Key Action – CASBE

With Council Alliance for Sustainable Built Environments (CASBE) councils, develop a more proactive and timeline driven strategy for achieving higher building efficiency standards and planning design standards

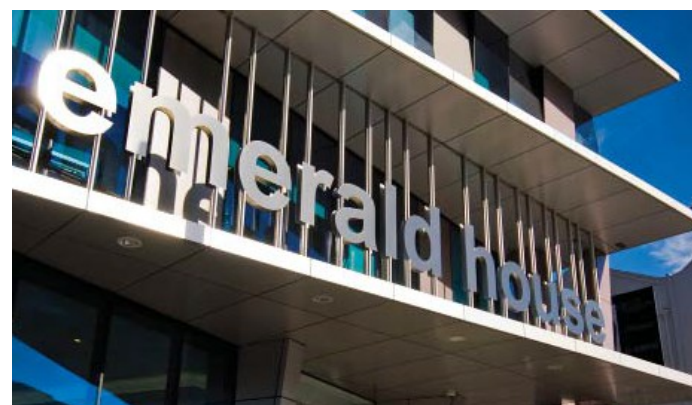
5.2.2 GREEN BUILDING COUNCIL AUSTRALIA

In July 2008 the CoPP became a member of the Green Building Council of Australia (GBCA), a national, not-for-profit organisation that produces the Green Star suite of rating tools.

The Green Star suite of rating tools provides a comprehensive whole of building assessment methodology for a range of non-residential and multi-residential buildings. The tools are aimed at the top 25% of the industry and have been successful in advancing the environmental performance of the Australian design and construction industry.

In November 2008 the CoPP became a Gold Sponsor to the Green Star Public Buildings Rating Tool. This tool is expected to become the new environmental standard for public buildings (town halls, community centres, etc) throughout Australia.

Council aims to maintain membership to the GBCA and to continue to support the development of the Green Star Public Buildings Rating Tool until such time as it is determined to be of no further benefit to Council or the community.



5.4 ADVOCATING FOR LEGISLATIVE CHANGES

Key action – ESD Local Planning Policy

The planning system provides an opportunity to ensure that all new developments and major extensions are energy efficient and less greenhouse intensive from their inception. Currently there is a voluntary scheme called SDAPP (Sustainable Design Assessment in the Planning Process) which ensures that participating developments achieve better outcomes than minimum standard building requirements. The adoption of an ESD Local Planning Policy would require that all eligible developments would contribute to achieving Toward Zero targets

Key Action – Government Advocacy

Advocate for state government policy for ESD in state planning provisions.

The CoPP believes that legislation relating to the inclusion of sustainable design strategies in the built environment is best delivered at a state and / or federal level. Council also believes there is a role for legislating both within the planning and building framework.

However, given the gaps that remain within Australian building and planning legislation regarding comprehensive sustainability requirements, Council will continue to advocate for legislative change in this area, including but not limited to the following:

- Inclusion of comprehensive sustainable design requirements in planning policy and provisions.
- Inclusion of comprehensive sustainability requirements, beyond energy efficiency, for building design and procurement.
- A link between building sustainability requirements and measurable outcomes including greenhouse gas emissions, potable water use, and waste reduction.
- Seek detailed state government guidance on the implications of climate change for the planning process.

Council believes the CASBE network is an important framework for identifying and consolidating support for legislative change, and will continue to support actions within the CASBE network that progress this issue.



Proposed Solar Demonstration Facility, Fennell St, Port Melbourne

Applicants: Greenerth Energy

Artists impression of proposed Zenith Solar combined heat and power arrays, subject to change and remains the property of Greenerth Energy.

Inkerman Oasis Housing, St.Kilda. Finalist for Best Contribution to Sustainable Development Large Scale, 2005 City of Port Phillip Design and Development Awards

Architects: WILLIAMS BOAG Architects

Photography: Tony Miller

Features Include: Solar passive design, effective external shading, thermal mass, renewable and exposed structural materials, grey water recycling, water storage tanks.

5.4.1 DRAFT ENVIRONMENTAL EFFICIENT DEVELOPMENT (EED) LOCAL PLANNING POLICY

Sustainable Design Assessment in the Planning Process (SDAPP) is a voluntary program, rather than a statutory requirement. Council intends to introduce a formal planning requirement by amending the Port Phillip Planning Scheme to include an Environmentally Sustainable Development (ESD) Local Planning Policy.

The policy would establish a requirement within the Planning Scheme that planning permit applications address and incorporate best practice environmentally sustainable design.

The policy would implement the general energy efficiency and sustainable development objectives of the State Planning Policy Framework, and key sustainability strategies and objectives of the Municipal Strategic Statement.

Adopting an ESD Local Planning Policy must occur through a Planning Scheme Amendment, which includes obtaining preliminary authorisation and final approval from the Minister for Planning.



6

REVIEW OF SUSTAINABLE DESIGN STRATEGY

This strategy and its initiatives are to be reviewed by the Responsible Officer every twelve months in conjunction with an annual review of the position description and forward planning process, to ensure consistency between the strategic direction outlined in this document and the actual actions and methodologies undertaken by Council. The Sustainable Design Strategy 2013 will be formally reviewed within four years of its adoption. The following items are intended to ensure the ongoing relevance of this Strategy.

6.0.1 RESPONSIBILITY

Responsible Manager – General Manager
Environment and Planning Division

Responsible Department/s – Sustainability

6.1 KEY PERFORMANCE INDICATORS

The following key performance indicators will be used to measure the CoPP's progress in encouraging the uptake of sustainable design through the planning assessment process and for Council's capital works projects:

SDAPP

Referring to Council's Sustainable Design Architect

- Proportion (in %) of all eligible planning applications which (participated) were referred to Council's Sustainable Design Architect.

Addressing Sustainable Design

- Proportion (in %) of all eligible planning applications which addressed sustainable design issues and received a planning permit

Using Council's Sustainable Design Assessment Tools

- Proportion (in %) of all eligible planning applications which completed a Green Star / STEPS / SDS assessment and received a planning permit.

COUNCIL CAPITAL WORKS

Referring to Council's Sustainable Design Architect

- The total number (in %) of council capital works building related projects which are referred to the Sustainable Design Architect.

Using Council's Sustainable Design Assessment Tools

- The total number (in %) of council capital works building related projects which are assessed with the Sustainable Design Scorecard.

Using Industry Best Practice Sustainable Design Assessment Tools

- The total number (in %) of council capital works building related projects which are assessed with the Green Star Tools.

APPENDIX I

PLANNING PRACTICE NOTE – PROCEDURES NO. 6 – SUSTAINABLE DESIGN ASSESSMENT IN THE PLANNING PROCESS

1. PURPOSE OF THE PRACTICE NOTE

The purpose of this Planning Practice Note is to assist statutory planners and other council officers in applying a consistent process of sustainable design assessment for development applications received by the City of Port Phillip. The following sections outline the triggers for assessment of sustainable design, the key points in the process and text templates to assist in drafting further information requests and permit conditions based on a number of different scenarios.

2. SUSTAINABLE DESIGN ASSESSMENT TRIGGER LEVEL

If a residential or non-residential development includes changes to greater than 50m² of floor area the planning application should undergo a sustainable design assessment as part of the planning process. The diagram on the following page outlines what is expected of each size of development application lodged with Council.

3. PRE-APPLICATION DISCUSSIONS

Council officers are encouraged to discuss sustainable design in all pre-application meetings for development applications. In particular;

- Council's ESD Engineer / Architect should be invited to pre-application meetings if possible.
- The applicant should be encouraged to summarise their approach to sustainability in a 'Sustainable Design Assessment' or 'Sustainability Management Plan', the creation of which can be supported by the use of the STEPS, Green Star and SDS tools.
- The applicant should be made aware of the expectation for level of detail of information requested based on the type and size of their development application
- Where possible the information contained in the assessment should be reflected on the town planning drawings.

4. LEVEL OF DETAIL REQUIRED

The level of ESD information applicants are expected to provide is proportional to the application size. Therefore Council has established different application categories that relate to the size and type of the application as outlined in the diagram on the following page.

**Victorian Local
Sustainability Accord**

**Sustainability
Fund**
Managed by
Sustainability Victoria
Victoria

CAUSE
Council Alliance for a
Sustainable Built Environment

**Moreland
Energy
Foundation**

The 304PP Rail out project was funded through the Victorian Government's Sustainability Fund under the Victorian Local Sustainability Accord

5. DETERMINING YOUR SDAPP CATEGORY

LARGE

Residential:

New development for 10 or more dwellings

Non-Residential

- 1 New development of a building with a gross floor area of more than 1000m², or
- 2 Extension to an existing building with a gross floor area greater than 1000m²

Prepare Report

Provide a detailed description on how the application addresses the 10 key sustainable building categories

SMP

Conduct Tool Assessment

To assess the design using an applicable Ecologically Sustainable Development (ESD) tool.

Suggested Tools: STEPS, SDS and Green Star

MEDIUM

Residential:

- 1 New development of 1-9 dwellings or
- 2 Extension to an existing building greater than 50m²

Non-Residential

- 1 New development of a building with a gross floor area between 50m² and 1000m², or
- 2 Extension to an existing building with a gross floor area between 50m² and 1 000m²

Prepare Report

Provide a succinct description on how the application addresses the 10 key sustainable building categories

SDA

Conduct Tool Assessment

To assess the design using an applicable (ESD) tool except for extensions where added building volume is less than 50% of existing building volume.

Suggested Tools: STEPS and SDS

SMALL

Residential:

Extension to an existing building where additional floor area is below 50m²

Non-Residential

- 1 New development of a building with a gross floor area of less than 50m², or
- 2 Extension to an existing building with a gross floor area below 50m²

Obtain

Councils ESD advice

Consider and submit with your planning application

Submit with your planning application

ESD Assessment by Council

Other relevant referrals
(eg Heritage, Urban Design, Engineering, external authorities)

Discussion of referral responses

Council decision on your planning application

6. INITIAL ASSESSMENT OF AN APPLICATION

Depending on the level of detail and quality of information provided by the applicant there are several different scenarios and responses available to the statutory planner; in consultation with the ESD Engineer / Architect.

Lodgement Scenario 1 – Submitted and Satisfactory

If at the time of lodgement, the applicant has submitted a Sustainable Design Assessment (SDA) this should be assessed by the ESD officer as part of the application's preliminary assessment. If the level of information is satisfactory, the sustainable design initiatives incorporated in the SDA or SMP are appropriate and the sustainable design initiatives have been marked on plans where appropriate, then the following conditions could be incorporated on permit, along with SDA or SMP and town planning drawings which demonstrate the initiatives endorsed. (Chart below)

Sustainable Design Assessment (SDA)	Sustainability Management Plan (SMP)
The development must incorporate the sustainable design initiatives in accordance with the endorsed SDA to the satisfaction of the Responsible Authority	Prior to the occupation of any building approved under this permit, a report from the author of the SMP report, approved pursuant to this permit, or similarly qualified person or company, must be submitted to the Responsible Authority. The report must be to the satisfaction of the Responsible Authority and must confirm that all measures specified in the SMP have been implemented in accordance with the approved Plan

Lodgement Scenario 2 – Submitted and Unsatisfactory

If the level of information provided is unsatisfactory, and / or the sustainable design initiatives incorporated in the SDA or SMP are inappropriate for the size or type of development or the sustainability initiatives have not been marked on plans, then a Request for Further Information (RFI) should be sent to the applicant outlining these issues. These should be included in the **Issues** section of the RFI for SDA's and the **further information required** section for SMP's. Example text for RFI's is provided below. These can be used in combination depending on the nature of information submitted by the applicant. These SDA / SMP requirements may be separated out so they can be copied into standard letters.

1. Council requests that applicants make a commitment to improving the sustainable design elements of their development above the minimum compliance requirements of the building code in accordance with Council's direction for a more sustainable municipality. The requirements for lodgement are shown on the accompanying flyer / brochure or at (http://www.portphillip.vic.gov.au/sustainable_design.htm). To enable comprehensive assessment by council, the Sustainable Design Assessment / Sustainability Management Plan provided should be amended to include the following further information to assist in councils assessment of your application;
 - a. ESD engineer/architect advice inserted here
 - b. ESD engineer/architect advice inserted here
2. To ensure consistency between the Sustainable Design Assessment / Sustainability Management Plan and plans for the development, the town planning drawings should be amended to incorporate the following sustainable design elements as identified in the Sustainable Design Assessment / Sustainability Management Plan provided;
 - a. ESD engineer/architect advice inserted here
 - b. ESD engineer/architect advice inserted here
3. From the information provided in the Sustainable Design Assessment / Sustainability Management Plan the development does not satisfy minimum STEPS/SDS targets / achieve a best practise standard. Easily achievable ESD initiatives have been identified to bring the developments towards a best practise standard and to a level that is considered appropriate for a development of this scale. Please refer to council's ESD Assessment (attached) for more information.
4. To assist you in completing a satisfactory Sustainable Design Assessment / Sustainability Management Plan, council suggests you talk to council's ESD Engineer / Architect / statutory planning department and agree on the level of sustainability you are seeking to achieve in your development and the means of assessing compliance.

Lodgement Scenario 3 – Not Submitted

If, at the time of lodgement, the applicant has not submitted an SDA/SMP an RFI should be sent to the applicant detailing this request. This should be included in the Issues section of the RFI for SDA's and the further information required section for SMP's. Example text is provided below;

- Council requests that applicants make a commitment to improving the sustainable design elements of their development above the minimum compliance requirements of the Building Code of Australia (BCA) in accordance with Council's direction for a more sustainable municipality. To enable assessment by Council, provision of a Sustainable Design Assessment (SDA) / Sustainability Management Plan (SMP) that outlines the development's sustainable design initiatives is requested. These are then assessed by council as part of the overall planning assessment process. An SDA / SMP should incorporate consideration of the following sustainable design elements;
 - Indoor environment quality
 - Energy efficiency
 - Water resources
 - Stormwater management
 - Building materials
 - Transport
 - Waste Management
 - Urban Ecology
 - Innovation
 - Ongoing building and site management

Applicants are encouraged to use the Sustainable Design Scorecard (SDS) (non-residential) and STEPS (residential) assessment tools. More information on these tools and the requirements of a Sustainable Design Assessment / Sustainability Management Plan is available on the accompanying flyer / brochure or at (http://www.portphillip.vic.gov.au/sustainable_design.htm).

7. PROCESS OF NEGOTIATION

Each application scenario is different and the success in securing the sustainability outcomes of any given development is dependent on negotiation and the willingness of the applicant to engage in the process. Depending on the council context and the outcomes of sustainable design negotiation, the following scenarios are likely at the time of issuing a permit for the development. Permit scenario 1 is considered the best-case scenario.

8. PERMIT SCENARIOS

Permit Scenario 1

The SDA/SMP has been provided and sustainable design initiatives marked on plans. The sustainable design initiatives are considered appropriate in the context of the development.

Process – Endorse SDA/SMP and condition as follows;

Sustainable Design Assessment (SDA)	Sustainability Management Plan (SMP)
The development must incorporate the sustainable design initiatives in accordance with the endorsed SDA to the satisfaction of the Responsible Authority	Prior to the occupation of any building approved under this permit, a report from the author of the SMP report, approved pursuant to this permit, or similarly qualified person or company, must be submitted to the satisfaction of the Responsible Authority. The report must confirm that all measures specified in the SMP have been implemented in accordance with the approved Plan.

Permit Scenario 2

The SDA/SMP has been provided and sustainable design initiatives are considered appropriate in the context of the development. Some sustainable design initiatives are not marked on plans.

Process – Endorse SDA/SMP and condition as follows;

Sustainable Design Assessment (SDA)	Sustainability Management Plan (SMP)
The development must incorporate the sustainable design initiatives in accordance with the endorsed SDA to the satisfaction of the Responsible Authority	Prior to the occupation of any building approved under this permit, a report from the author of the SMP report, approved pursuant to this permit, or similarly qualified person or company, must be submitted to the satisfaction of the Responsible Authority. The report must confirm that all measures specified in the SMP have been implemented in accordance with the approved Plan.

AND...

Condition 1

Before the development commences, amended plans must be submitted to the satisfaction of the Responsible Authority. When approved, the plans will be endorsed and then form part of the permit. The plans must be generally in accordance with XXXX but modified to show; Outline sustainable design initiatives, TP Drawings in addition to any other non ESD initiatives required to be amended.

Permit Scenario 3

In situations where an applicant has not shown an outcome which they intended to in either an SDA or SMP, or they did not submit an SDA or SMP when they indicated otherwise, it is likely that council will impose a condition in accordance with clause 21.03 Ecologically Sustainable Development of the local planning policy.

9. AMENDMENTS AND SECONDARY CONSENT

Following the issue of the planning permit, if the applicant proposes changes to the original proposal then consideration should be given to the effect of the changes on the sustainability credentials of the development. If the design changes are assessed by the planner as likely to have a significant and detrimental effect on one or more of the 10 sustainable design criteria, then council should work with the applicant to limit these effects. Advice as to whether the proposed changes are likely to result in a poorer ESD outcome can be sought from Council's ESD Officer.

In the event that the permit is sought to be amended (pursuant to Section 72 of the Act), then the SDA/SMP condition should be amended accordingly.

10. NOTES

- The submission of a SDA/SMP does not delay the overall application process
- The ESD Engineer / Architect should be available to assist planners, liaise with applicants and can attend meetings if/when required.
- The assessment tools have been designed so that with a little instruction the average architect/designer should be able to complete them. Training is however available on request.
- Planners should not undertake STEPS/SDS assessments, as it is the applicants who are committing to the design strategies and they who need to tell you how they are addressing sustainable design.

APPENDIX 2

SUSTAINABLE DESIGN ASSESSMENT (SDA) STATEMENT

Sustainable Design Assessment Tools	
To support your Sustainable Design Assessment, the following should be used:	
STEPS (www.sustainablesteps.com.au) Residential developments	Sustainable Design Scorecard (SDS) Non-residential developments
For more information visit: www.portphillip.vic.gov.au/sdapp	

MUNICIPALITY: City of Port Phillip

PROJECT NAME:

PROJECT ADDRESS:.....

PLANNING APPLICATION NUMBER:

APPLICANT:

SITE AREA: m²

EXISTING BUILDING AREA (IF EXTENSION): m²

NEW BUILDING AREA: m²

ENVIRONMENTALLY SUSTAINABLE DESIGN (ESD) INITIATIVES

Outline and summarise any general design principles that are applicable to the improved environmental performance of the development (i.e. passive solar orientation and cross ventilation).

1. INDOOR ENVIRONMENT QUALITY

Objective: to achieve a healthy indoor environment quality for the wellbeing of building occupants.

Considerations:

- Access to natural ventilation
(provide description for ventilation strategy in main habitable areas in excess of BCA requirements)
- Access to daylight
(provide description for access to daylight in main habitable areas in excess of BCA requirements and show operable windows on relevant elevation/section drawings)
- External views (provide description for how design provides for external views)
- Reduction in volatile organic compounds (provide description of intention to provide fitout with elements of low Volatile Organic Compounds including joinery, paint, carpet etc)

2. ENERGY EFFICIENCY

Objective: to ensure the efficient use of energy, to reduce total operating greenhouse emissions and to reduce energy peak demand.

Considerations:

- Energy rating of building fabric in excess of minimum BCA requirements
(Provide preliminary energy ratings NatHERS, NABERS Energy, etc)
- External shading devices to north, east and west facing glazing
(Provide description and show fixed/operable shading devices on relevant elevation/section drawings)

- Heating system types and associated energy-efficiency rating/benchmark
(At least one star within the best available www.energyrating.gov.au)
- Cooling system types and associated energy-efficiency rating/benchmark
(At least one star within the best available www.energyrating.gov.au)
- Hot water system type and associated energy-efficiency rating/benchmark
(At least one star within the best available www.energyrating.gov.au)
- Location of fixed clothes drying lines/ racks
(Provide description internal/external and size available, show on relevant floor plans)
- Lighting strategy
(Provide description/table for main habitable areas considering fluorescent, compact fluorescent, or LED lights)
- Location and size of renewable energy systems including photovoltaic (PV) solar power, solar hot water, wind turbines, geo-thermal etc.
(Provide description of system type, size and features and show on relevant floor/roof/site plan drawings)

3. WATER EFFICIENCY

Objective: to ensure the efficient use of water, to reduce total operating potable water use and to encourage the appropriate use of alternative water sources.

Considerations:

- Water-efficiency rating of new showerheads
(Provide description, suggested minimum 3 Star WELS rating than 4.5L/min. but not more than 6.0L/min)
- Water-efficiency rating of new tapware
(Provide description, suggested minimum 5 Star WELS more than 4.5L/min. but not more than 6L/min.)
- Water efficiency rating of new toilet cisterns
(Provide description, suggested 4 Star WELS rating more than 4.0L but not more than 3.5L average flush volume)
- Size, capacity and location of rainwater tanks, including catchment area and where the water is expected to be used (toilet flushing, garden irrigation, etc)
(Provide description and show on relevant floor/roof/site plan drawings)
- Provisions for a more water efficient landscaping
(Provide description and show on relevant floor/roof/site plan drawings)
- Size and general location of greywater treatment/storage systems
(Provide description, suggested EPA only approved systems and show on relevant floor/site plans)

4. STORMWATER MANAGEMENT

Objective: to reduce the impact of stormwater run-off, to improve the water quality of stormwater run-off, to achieve best practice stormwater quality outcomes in accordance with Urban Stormwater Best Practice Environmental Guidelines (CSIRO 1999) and to incorporate the use of water sensitive urban design, including stormwater re-use.

Considerations:

- Total site area
(Provide description of shape, topography and area in m² show on relevant floor/site plans)
- Total number and area of impervious surfaces and their related treatments prior to off-site release
(Provide description/table of each impervious surface and their related treatments)
eg. Roof area 01 250 m² connected to rainwater tank
 Roof area 02 50m² connected to raingarden
 Concrete driveway 80m² none
- Total number and area of pervious surfaces (detention through on-site filtration)
(Provide description/table of each pervious surface and their type)
eg. Lawn area 100 m² grass and soil
 Pathway 50m² crushed aggregate on sand and soil
- Provide additional STORM calculations (www.storm.melbournewater.com.au/)
(Enter municipality (Port Phillip, site area, address, development type and all impervious surfaces and their related treatments (if none, select none) A minimum score of 100% is acceptable, print and attach

report to this statement and the STEPS assessment if conducted.

5. MATERIALS

Objective: to minimise the environmental impacts of materials used by encouraging the use of materials with a favourable lifecycle assessment.

Considerations:

- **Retention of existing structure and materials** (Provide a description of the intended re-use of existing structures and/or materials within the proposed design and show on relevant floor/site/demolition plans and elevations/sections)
- **More environmentally friendly material types being used, and their sources** (Provide a description of intended materials to be used that have sustainable production processes (including low embodied energy, recycled content and reuse, sustainable plantations etc) and list their independent sources of verification including environmental lists (GECA, Ecospecifier, Moreland Greenlist, Green Star etc) and industry bodies (Forest Stewardship Council, Australian Steel Institute Sustainability Charter etc) and show on relevant floor/site/demolition plans and elevations/sections)
- **Reusability and recyclability of materials** (Provide a description of intended materials to be used that have already been recycled and/or their potential to be recycled once they have finished their purpose for this design and show on relevant floor/site/demolition plans and elevations/sections)

6. TRANSPORT

Objective: to minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.

Considerations:

- **Priority for access and movement around site by walking** (Provide a description of how the design addresses access and movement for walking)
- **Provide convenient and secure bike storage facilities for building users and guests** (Provide the total number of bike storage facilities and ratio to the total number of building users and guests and show on relevant floor/site plans)
- **Provide end of trip change facilities for bike users** (Provide a description of how the design provides end of trip change facilities for bike users and ratio to the total number of on-site bicycle storage spaces)
- **Access to public transport** (Provide a description of the sites proximity and access to public transport and show on relevant site plans)
- **Access to car share services** (Provide a description of any on or off site car share service and show on relevant site plans)
- **Reduction in extent of onsite car parking** (Provide a description of any parking dispensation being sought and provide details for consideration eg. green travel plan)

7. WASTE MANAGEMENT

Objective: to ensure waste avoidance, and reuse and recycling during the construction and operation stages of development.

Considerations:

- **Allocated space(s) for general waste, recycling and green waste** (Provide a description of storage space for each class of waste and accessibility for building users and waste contractors at the point of disposal and collection and show on relevant site/floor plans)
- **Operation Waste Management Plan** (Provide description of how operational waste will be managed through the occupied life of the building)
- **Construction Waste Management Plan**

(Provide description of how construction waste will be managed through the construction process including material sorting, disposal and targeted recycling rates)

8. URBAN ECOLOGY

Objective: to protect and enhance biodiversity and to encourage the planting of indigenous vegetation.

Considerations:

- **Existing Landscaped Area** (provide the size (m²) of the existing landscaped areas)
- **Proposed Landscaped Area** (provide the size (m²) of the proposed landscaped areas)
- **Impacts on existing site ecology**
(provide a description of all new, and existing retained landscaped areas and indicate how the design response has enhanced, maintained or reduced the sites biodiversity and show on relevant site/floor/landscape plans)
- **Retention and inclusion of native vegetation**
(provide a description of how the design has retained native vegetation and allowed for drought tolerant native vegetation show on relevant site/floor/landscape plans)

9. INNOVATION

Objective: to encourage innovative technology, design and processes in all development, so as to positively influence the sustainability of buildings

Considerations:

- **Significant enhancement of best practice ESD standards**
(provide a description of how design exceeds best practice standards ie NatHERS 10 star dwelling)
- **Unique sustainable design element or new technology implemented to enhance ESD outcomes** (provide a description of how the design implements unique/new methods and strategies to enhance design outcomes)
- **Excellent passive design approach**
(provide a description of how the design implements passive design strategies that maximise natural resources and minimise greenhouse gas emissions aiming to be carbon neutral)
- **Responding to local climate conditions**
(provide a description of how the design responds to local climate conditions which enhance ESD outcomes)

10. CONSTRUCTION AND BUILDING MANAGEMENT

Objectives: to encourage a holistic and integrated design and construction process and ongoing high performance.

Considerations:

- **Tuning of building systems** (provide a description of how the designs building systems are managed to ensure optimal efficiency)
- **Building User's Guide that explains a building's ESD principles** (provide a description of intent to provide building occupants with a users guide that explains ESD principles)
- **Operation Environmental Management Plan**
(provide a description of any Environmental Management Plans that intend to be implemented during operation phase)
- **Environmental credentials of project team**
(where known provide a description of any environmental credentials that the project team may have (ie Contractor has valid ISO14001 environmental management accreditation, Green Star Accredited Professional, Certified Green Plumber etc.)

APPENDIX 3

KEY RATING TOOLS

Green Star

(<http://www.gbca.org.au/green-star/>)

Green Star is a comprehensive, national, environmental rating scheme that evaluates the environmental design and achievements of buildings. It covers a number of categories that assess the environmental impact that is a direct consequence of a project's site selection, design, construction and maintenance.

Music

(<http://www.toolkit.net.au/music>)

Model for Urban Stormwater Improvement Conceptualisation. A tool that simulates urban stormwater systems. Water quality and peak flows can be assessed against design constraints or requirements.

National Australian Built Environment Rating Scheme (NABERS)

(<http://www.nabers.com.au/>)

The NABERS tool rates the operational impacts of a building on the environment. It can be used during the design phase to predict base building ratings and establish benchmarks and likely outcomes. It is able to distinguish between the tenancy and base building and therefore can identify and detail areas for improvement. Official ratings cannot be achieved until the building has been operational for 12 months. NABERS applies to offices, hotels, retail and residential buildings,

Nationwide House Energy Rating Scheme (NatHERS)

(<http://www.nathers.gov.au/>)

NatHERS provides a framework that allows various computer software tools to rate the potential energy efficiency of Australian homes. It defines the minimum set of information that must be used by all software tools. The different softwares report on the building fabric of a house and shows how a particular design will use energy for heating and cooling, assisting in the design of an energy efficient solution. Using one of the approved softwares, i.e. FirstRate, Accurate or BERS allows building permit applicants to proof compliance with BCA.

SDS

(www.portphillip.vic.gov.au/sds.htm)

Sustainable Design Scorecard. The SDS is a website tool that measures the environmental impacts of a design. It is an Excel document that rates seven categories including energy efficiency, materials, transport, water, indoor environmental quality, waste, and ESD excellence.

The SDS can be used to rate a proposed or existing commercial building, retail building, industrial building, or retail or commercial component of a mixed-use building.

STEPS

(www.sustainablesteps.com.au)

Sustainable Tools for Environmental Performance Strategy. STEPS is a website tool that measures the environmental impacts in the design of a home.

It rates five categories including mains (drinking water) use, building material impacts, greenhouse emissions, peak energy use and stormwater quality leaving the property. It also calculates the number of bicycle places required and space needed for waste recycling services relative to the size of the development.

STEPS can be applied to the design of a new or existing house, town house, multi-unit development, or residential component of a mixed-use building.

STORM (<http://storm.melbournewater.com.au/>)

Melbourne Water has developed the Stormwater Treatment Objective – Relative Measure (STORM) Calculator as a method of simplifying the analysis of stormwater treatment methods. The STORM Calculator is designed for the general public to easily assess Water Sensitive Urban Design (WSUD) measures on their property.

The tool has been developed specifically for small residential, commercial and industrial developments to rate how well different properties treat stormwater and to compare them against a common measurement system.

APPENDIX 5

GLOSSARY OF TERMS

BEST PRACTICE

A combination of techniques, methodologies and systems that, through experience and research, have reliably led to optimum ESD outcomes. Best practice in the built environment encompasses the full life cycle, from clearing of existing site conditions; design; construction and ongoing occupation; through to final demolition or recycling.

CLIMATE RESILIENCE

The OECD identifies two approaches to the definition of 'resilience' in the context of climate change; firstly "The amount of disturbance a system can absorb and still remain within the same state or domain of attraction" and secondly "The degree to which the system is capable of self-organisation". For the purposes of this policy, climate resilience is defined as the ability of a system to recover from, or adapt to, changes in climate conditions.

<http://www.oecd.org/dataoecd/36/53/36736773.pdf>

ECOLOGICAL FOOTPRINT

a measure of environmental impact defined 'as the area of productive land and water ecosystems required to produce the resources that the population consumes and assimilate the wastes that the population produces'.

Ref: <http://www.environmentdesignguide.net.au/media/NOTII.pdf>

ENERGY PEAK DEMAND

short term or peak demands in energy use, usually associated with electricity use caused by summer cooling loads.

ENVIRONMENTALLY PREFERABLE MATERIALS

materials that 'have a lesser or reduced effect on human health and the environment when compared with competing materials that serve the same purpose'.

ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (United Nations World Commission on Environment and Development 1987)

GREENHOUSE EFFECT

'the warming of the planet due to the increase in density of trace greenhouse gases in the atmosphere which have the effect of increasing the absorption of sunlight by preventing the outward radiation of heat from the Earth (see enhanced greenhouse effect); also, the internal warming of a building due to the absorption, usually through glass, of short-wave solar energy which is stored as heat by elements of construction and prevented from being re-emitted as long-wave'. Ref: <http://www.environmentdesignguide.net.au/media/NOTII.pdf>

GREENHOUSE GASES

"those gases, such as water vapour, carbon dioxide, tropospheric ozone, methane, and low level ozone that are transparent to solar radiation, but opaque to long wave radiation', and which contribute to the greenhouse effect. Ref: http://www.mem-algeria.org/environment/climate_change_terms.pdf

INDOOR ENVIRONMENT QUALITY

the quality of a work environment based on the impact of the base building and the building fitout on human health. Issues considered generally include temperature, air quality (including ventilation and contaminants), lighting quality, noise, spatial layout, visual and acoustic privacy, furnishings, and views.

NON-RENEWABLE RESOURCES

'natural resources that are not naturally replenished once they have been harvested. Non-renewable resources can be used up completely or else used up to such a degree that it is economically impractical to obtain any more of them. Fossil fuels and metal ores are examples of non-renewable resources'. Ref: <http://www.nyo.unep.org/action/Text/apI-t.htm>

POSITIVE DEVELOPMENT

'physical development that achieves net positive impacts during its lifecycle over pre-development conditions by increasing economic, social and ecological capital'

Birkeland, J. Positive Development. From vicious circles to virtuous cycles through built environment design', 2008

STORMWATER RUN-OFF

'precipitation that accumulates in natural and/or constructed storage and stormwater systems during and immediately following a storm event'.

SUSTAINABILITY ASSESSMENT TOOL

In the context of this strategy, a mechanism used by the CoPP to evaluate the environmental sustainability performance of a given development. The current tools used by the CoPP are Moreland STEPS for residential development and the Sustainable Design Scorecard Non-Residential for non-residential developments.

URBAN HEAT ISLAND EFFECT

'a dome of elevated temperatures over an urban area caused by the heat absorbed by structures and pavements' Ref: <http://www.environmentdesignguide.net.au/media/NOTII.pdf>



Postal Address:

City of Port Phillip
Private Bag 3, St Kilda, Vic 3182

ASSIST Call Centre: **9209 6777**

Facsimile: **9536 2722**

Website: **www.portphillip.vic.gov.au**

Email: **assist@portphillip.vic.gov.au**

TTY (hearing impaired telephone typewriter): **9209 6713**

See the National Relay Service for more information

SMS for the hearing impaired: **0432 005 405**

Please contact ASSIST on 9209 6777 if you
require a large print version of this brochure

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