



## ESD in the Planning Permit Application Process

Yarra City Council's planning permit application process includes Environmentally Sustainable Development (ESD) considerations. This is now supported by the ESD Local Policy Clause 22.17 of the Yarra Planning Scheme, entitled *Environmentally Sustainable Development*.

The Clause 22.17 requires all eligible applications to demonstrate best practice in ESD, supported by the Built Environment Sustainability Scorecard (BESS) web-based application tool, which is based on the Sustainable Design Assessment in the Planning Process (SDAPP) program.

As detailed in Clause 22.17, this application is a 'large' planning application as it meets the category *Non-residential - 1,000m<sup>2</sup> floor area or greater*.

## What is a Sustainable Management Plan (SMP)?

An SMP is a detailed sustainability assessment of a proposed design at the planning stage. An SMP demonstrates best practice in the 10 Key Sustainable Building Categories and;

- Provides a detailed assessment of the development. It may use relevant tools such as BESS and STORM or an alternative assessment approach to the satisfaction of the responsible authority; and
- Identifies achievable environmental performance outcomes having regard to the objectives of Clause 22.17 (as appropriate); and
- Demonstrates that the building has the design potential to achieve the relevant environmental performance outcomes, having regard to the site's opportunities and constraints; and
- Documents the means by which the performance outcomes can be achieved.

An SMP identifies beneficial, easy to implement, best practice initiatives. The nature of larger developments provides the opportunity for increased environmental benefits and the opportunity for major resource savings. Hence, greater rigour in investigation is justified. It may be necessary to engage a sustainability consultant to prepare an SMP.

## Assessment Process:

The applicant's town planning drawings provide the basis for Council's ESD assessment. Through the provided drawings and the SMP, Council requires the applicant to demonstrate best practice. The following comments are based on the review of the architectural drawings, prepared by *Lyons Architecture* (10.11.2017) and the accompanying SMP prepared by AECOM (06.11.2017) & Stormwater Management Plan prepared by *Arup* (02.11.2017).



## Table of Contents

Assessment Summary: .....	3
1. Indoor Environment Quality (IEQ) .....	5
2. Energy Efficiency .....	6
3. Water Efficiency .....	8
4. Stormwater Management .....	9
5. Building Materials .....	10
6. Transport .....	11
7. Waste Management .....	12
8. Urban Ecology .....	13
9. Innovation .....	14
10. Construction and Building Management .....	15
Applicant Response Guidelines .....	16



## Assessment Summary:

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Responsible Planner:	Mary Osman		
ESD Advisor:	Euan Williamson		
Date:	08.02.2017	Planning Application No:	PLN17/0991
Subject Site:	ACU 115 Victoria Street, Fitzroy.		
Site Area:	Approx. 5,850m <sup>2</sup>	Site Coverage:	100%
Project Description:	Multi storey university building		
Pre-application meeting(s):	None.		

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**The standard of the ESD largely meets Council's Environmental Sustainable Design (ESD) standards.** Should a permit be issued, the following ESD commitments (1) and deficiencies (2) should be conditioned as part of a planning permit to ensure Council's ESD standards are fully met.

*Furthermore, it is recommended that all ESD commitments (1), deficiencies (2) and the outstanding information (3) are addressed in an updated SMP report and are clearly shown on Condition 1 drawings. ESD improvement opportunities (4) have been summarised as a recommendation to the applicant.*

### (1) Applicant ESD Commitments:

- Certified 5 Star Green Star Design and As Built rating.
- NCC energy efficiency standards exceeded by at least 40%.
- High efficiency system with 3 staged chillers with COP of 5.5, condensing flue boilers with heat recovery AHUs and VAV system.
- A 62.5kWp solar PV system.
- Good access to daylight.
- Mechanical ventilation with fresh air rates exceeding AS1668 rates by at least 50%.
- Water efficient taps, fixtures and irrigation system.

### (2) Application ESD Deficiencies:

- A MUSIC report demonstrating best practice in stormwater management has been provided that relies on 1,258m<sup>2</sup> of roof draining to 30,000 litres of storage for flushing of all urinals and toilets onsite, plus a system of SPEL propriety stormwater management products filtering the remaining impermeable site area. The SPEL products that are proposed appear to be reliant on propriety information and assumptions built into the MUSIC model nodes that cannot ensure that urban stormwater quality objectives of best practice can be met. Please provide valid evidence that the SPEL systems can perform to the required best practice standard in local conditions, or select a different stormwater treatment type.

### (3) Outstanding Information:

- Please provide a completed JV3 energy model prior to occupation that demonstrates 40% energy efficiency improvement on the NCC minimum requirements will be achieved.
- Please clearly mark the proposed solar PV array on the roof plan.
- Exact hot water system type unknown, although overall energy performance is high. Please indicate what type of hot water system will be used and its standard of energy efficiency.
- The SMP claims 85 bicycle spaces for students provided, but the architectural drawings appear to have 74. 25 spaces for staff is consistent. Please ensure that the 85 student bike spaces are shown on the architectural drawings.
- No electric vehicle charge facilities can be noted on the architectural drawings, but they are referenced in the SMP. Please update drawings to clearly show number and location.



#### **(4) ESD Improvement Opportunities**

- Exterior shading has not been incorporated into the building fabric design. Large areas of glazing are exposed to high levels of summer solar heat gain on the north, east and western facades. Although the overall energy performance will be high, I recommend the applicant consider exterior shading devices to protect glazing on the north, east and west facades in addition to the high performance glazing proposed.

#### **Further Recommendations:**

The applicant is encouraged to consider the inclusion of ESD recommendations, detailed in this referral report. Further guidance on how to meet individual planning conditions has been provided in reference to the individual categories. The applicant is also encouraged to seek further advice or clarification from Council on the individual project recommendations.

# 1. Indoor Environment Quality (IEQ)

## Objectives:

- to achieve a healthy indoor environment quality for the wellbeing of building occupants.
- to provide a naturally comfortable indoor environment will lower the need for building services, such as artificial lighting, mechanical ventilation and cooling and heating devices.

Issues	Applicant's Design Responses	Council Comments	CAR*
Natural Ventilation and Night Purging	Mechanical ventilation with fresh air rates exceeding AS1668 rates by at least 50%.	-	1
Daylight & Solar Access	Access to daylight is suitable with ~40% of the office floor area reaching 160 lux for at least 80% of operating hours.	-	1
Glare	Internal blinds will control glare.	-	1
Hazardous Materials and VOC	Low VOC paints, adhesives, sealants, floor coverings.	-	1
Thermal Comfort	Good thermal comfort is determined through a combination of good access to ventilation, balanced passive heat gains and high levels of insulation. The application proposes for the office areas: - Good mechanical ventilation - High performance glazing - Good thermal efficiency standards	Please refer to section on, <i>NCC Energy Efficiency Requirements Exceeded and Effective Shading</i>	1

## \* Council Assessment Ratings:

- 1 – Design Response is **SATISFACTORY**; 2 – Design Response is **NOT SATISFACTORY**  
3 – **MORE INFORMATION** is required; 4 – **ESD IMPROVEMENT OPPORTUNITIES**

## References and useful information:

SDAPP Fact Sheet: [1. Indoor Environment Quality](#)  
 Good Environmental Choice Australia Standards [www.geca.org.au](http://www.geca.org.au)  
 Australian Green Procurement [www.greenprocurement.org](http://www.greenprocurement.org)  
 Residential Flat Design Code [www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)  
 Your Home [www.yourhome.gov.au](http://www.yourhome.gov.au)

## 2. Energy Efficiency

### Objectives:

- to ensure the efficient use of energy
- to reduce total operating greenhouse emissions
- to reduce energy peak demand
- to minimize associated energy costs.

Issues	Applicant's Design Responses	Council Comments	CAR*
<b>NCC Energy Efficiency Requirements Exceeded</b>	NCC energy efficiency standards exceeded by at least 40%. 5 Star Green Star Design and As Built rating.	Please provide a completed JV3 energy model prior to occupation that demonstrates the 40% energy efficiency improvement on the NCC minimum requirements will be achieved.	3
<b>Hot Water System</b>	Exact hot water system type unknown. Overall energy performance standard is high.	Please indicate what type of hot water system will be used and its standard of energy efficiency.	3
<b>Peak Energy Demand</b>	Peak demand reduced through various initiatives.	-	1
<b>Effective Shading</b>	Exterior shading has not been incorporated into the building fabric design. Large of area of glazing are exposed to high levels of summer solar heat gain on the north, east and western facades.	Although the overall energy performance will be high, I recommend the applicant consider exterior shading devices to protect glazing on the north, east and west facades in addition to the high performance glazing proposed.	4
<b>Efficient HVAC system</b>	High efficiency system with 3 staged chillers with full load COP of 5.5, condensing flue boilers with heat recovery AHUs and VAV system.	-	1
<b>Efficient Lighting</b>	Energy efficient lighting system type unknown, but at least a 40% improvement on NCC requirements overall.	-	1
<b>Electricity Generation</b>	Proposing a 62.5kWp solar PV system.	Please clearly mark the proposed solar PV array on the roof plan.	3
<b>Other</b>	-	-	-

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### References and useful information:

SDAPP Fact Sheet: [2. Energy Efficiency](#)

House Energy Rating [www.makeyourhomegreen.vic.gov.au](http://www.makeyourhomegreen.vic.gov.au)  
Building Code Australia [www.abcb.gov.au](http://www.abcb.gov.au)  
Window Efficiency Rating Scheme (WERS) [www.wers.net](http://www.wers.net)  
Minimum Energy Performance Standards (MEPS) [www.energyrating.gov.au](http://www.energyrating.gov.au)  
Energy Efficiency [www.resourcesmart.vic.gov.au](http://www.resourcesmart.vic.gov.au)

### 3. Water Efficiency

#### Objectives:

- to ensure the efficient use of water
- to reduce total operating potable water use
- to encourage the collection and reuse of rainwater and stormwater
- to encourage the appropriate use of alternative water sources (e.g. grey water)
- to minimise associated water costs.

Issues	Applicant's Design Responses	Council Comments	CAR*
Minimising Amenity Water Demand	Water efficient taps and fittings with the following WELS ratings/flow rates: <ul style="list-style-type: none"> <li>- 6.5 litre/min shower heads</li> <li>- 4.5 litre/min taps</li> <li>- 3/4.5 litre flush toilets</li> <li>- 0.8 litre flush urinals</li> </ul>	-	1
Water for Toilet Flushing	30,000 litre rainwater tank will be provided connected to all toilets and urinals onsite.	-	1
Water Meter	Sub-metering of water demands.	-	1
Landscape Irrigation	Water efficient landscape irrigation provided by rainwater.	Investigation recycled water for irrigation.	1
Other	-	-	-

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#### References and useful information:

SDAPP Fact Sheet: [3. Water Efficiency](#)  
 Water Efficient Labelling Scheme (WELS) [www.waterrating.gov.au](http://www.waterrating.gov.au)  
 Water Services Association of Australia [www.wsaa.asn.au](http://www.wsaa.asn.au)  
 Water Tank Requirement [www.makeyourhomegreen.vic.gov.au](http://www.makeyourhomegreen.vic.gov.au)  
 Melbourne Water STORM calculator [www.storm.melbournewater.com.au](http://www.storm.melbournewater.com.au)  
 Sustainable Landscaping [www.ourwater.vic.gov.au](http://www.ourwater.vic.gov.au)



## 4. Stormwater Management

### Objectives:

- to reduce the impact of stormwater runoff
- to improve the water quality of stormwater runoff
- to achieve best practice stormwater quality outcomes
- to incorporate Water Sensitive Urban Design principles.

Issues	Applicant's Design Responses	Council Comments	CAR*
<b>STORM Rating</b>	A MUSIC report demonstrating best practice in stormwater management has been provided that relies on 1,258m <sup>2</sup> of roof draining to 30,000 litres of storage for flushing of all urinals and toilets onsite, plus a system of SPEL proprietary stormwater management products filtering the remaining impermeable site area.	The SPEL products that are proposed appear to be reliant on propriety information and assumptions built into the MUSIC model nodes that cannot ensure that urban stormwater quality objectives of best practice can be met. Please provide valid evidence that the SPEL systems can perform to the required best practice standard in local conditions, or select a different stormwater treatment type.	2
<b>Discharge to Sewer</b>	-	-	-
<b>Stormwater Diversion</b>	-	-	-
<b>Stormwater Detention</b>	-	-	-
<b>Stormwater Treatment</b>	-	-	-
<b>Others</b>	-	-	-

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### References and useful information:

SDAPP Fact Sheet: [4. Stormwater Management](#)

Melbourne Water STORM calculator [www.storm.melbournewater.com.au](http://www.storm.melbournewater.com.au)

Water Sensitive Urban Design Principles [www.melbournewater.com.au](http://www.melbournewater.com.au)

Environmental Protection Authority Victoria [www.epa.vic.gov.au](http://www.epa.vic.gov.au)

Water Services Association of Australia [www.wsaa.asn.au](http://www.wsaa.asn.au)

Sustainable Landscaping [www.ourwater.vic.gov.au](http://www.ourwater.vic.gov.au)

## 5. Building Materials

### Objectives:

- to minimise the environmental impact of materials used by encouraging the use of materials with a favourable lifecycle assessment.

Issues	Applicant's Design Responses	Council Comments	CAR*
Reuse of Recycled Materials	No information has been provided.	-	1
Embodied Energy of Concrete and Steel	50% of water will be reclaimed water, and 60% of steel will be ESCA accredited.	-	1
Sustainable Timber	95% of all timber will be accredited as sustainable by FSC or PEFC.	-	1
Design for Disassembly	No information has been provided.	Consider a small pallet of materials and construction techniques that can assist in disassembly.	4
PVC	Best practice PVC used in floor coverings, downpipes, cabling, or PVC will not be used.	-	1

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### References and useful information:

SDAPP Fact Sheet: [5. Building Materials](#)

Building Materials, Technical Manuals [www.yourhome.gov.au](http://www.yourhome.gov.au)

Embodied Energy Technical Manual [www.yourhome.gov.au](http://www.yourhome.gov.au)

Good Environmental Choice Australia Standards [www.geca.org.au](http://www.geca.org.au)

Forest Stewardship Council Certification Scheme [www.fsc.org](http://www.fsc.org)

Australian Green Procurement [www.greenprocurement.org](http://www.greenprocurement.org)

## 6. Transport

### Objectives:

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

Issues	Applicant's Design Responses	Council Comments	CAR*
<b>Minimising the Provision of Car Parks</b>	Car parking in basement levels.	-	1
<b>Bike Parking Spaces</b>	The SMP claims 85 bicycle spaces for students provided, but the architectural drawings appear to have 74. 25 spaces for staff is consistent	Please ensure that the 85 student bike spaces are shown on the architectural drawings.	3
<b>End of Trip Facilities</b>	End of trip facilities include lockers and showers.	-	1
<b>Car Share Facilities</b>	No information has been provided.	-	1
<b>Electric vehicle charging</b>	SMP includes electric vehicle charging.	No electric vehicle charge facilities can be noted on the architectural drawings, but are referenced in the SMP. Please update drawings to clearly show number and location.	3

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### References and useful information:

SDAPP Fact Sheet: [6. Transport](#)

Off-setting Car Emissions Options [www.greenfleet.com.au](http://www.greenfleet.com.au)

Sustainable Transport [www.transport.vic.gov.au/doi/internet/icy.nsf](http://www.transport.vic.gov.au/doi/internet/icy.nsf)

Car share options [www.yarracity.vic.gov.au/Parking-roads-and-transport/Transport-Services/Carsharing/](http://www.yarracity.vic.gov.au/Parking-roads-and-transport/Transport-Services/Carsharing/)

Bicycle Victoria [www.bv.com.au](http://www.bv.com.au)

## 7. Waste Management

### Objectives:

- to ensure waste avoidance, reuse and recycling during the design, construction and operation stages of development
- to ensure long term reusability of building materials.
- to meet Councils' requirement that all multi-unit developments must provide a Waste Management Plan in accordance with the *Guide to Best Practice for Waste Management in Multi-unit Developments 2010*, published by Sustainability Victoria.

Issues	Applicant's Design Responses	Council Comments	CAR*
Construction Waste Management	10kg/m2 fixed CD waste target.	-	1
Operational Waste Management	Best Practice Waste Management Plan	Recommend separate waste streams for paper, glass, plastic, metal and organic waste.	4
Storage Spaces for Recycling and Green Waste	Area for bins can be identified on the plans, but no delineation for different waste streams can be identified.	Please note separate space for recycling and general waste on plans. Ensure that adequate space for waste and recycling is included in the WMP.	3
Others	-	-	-

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### References and useful information:

SDAPP Fact Sheet: [7. Waste Management](#)

Construction and Waste Management [www.sustainability.vic.gov.au](http://www.sustainability.vic.gov.au)

Preparing a WMP [www.epa.vic.gov.au](http://www.epa.vic.gov.au)

Waste and Recycling [www.resourcesmart.vic.gov.au](http://www.resourcesmart.vic.gov.au)

Better Practice Guide for Waste Management in Multi-Unit Dwellings (2002)

[www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

Waste reduction in office buildings (2002) [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

## 8. Urban Ecology

### Objectives:

- to protect and enhance biodiversity
- to provide sustainable landscaping
- to protect and manage all remnant indigenous plant communities
- to encourage the planting of indigenous vegetation.

Issues	Applicant's Design Responses	Council Comments	CAR*
On Site Topsoil Retention	There is no productive topsoil on this site.	-	NA
Maintaining / Enhancing Ecological Value	Landscaping will marginally improve the ecological value of the site.	-	1
Heat Island Effect	No specific information has been submitted.	-	1
Communal areas	Extensive communal areas for students and staff.	-	1

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### References and useful information:

SDAPP Fact Sheet: [8. Urban Ecology](#)

Department of Sustainability and Environment [www.dse.vic.gov.au](http://www.dse.vic.gov.au)

Australian Research Centre for Urban Ecology [www.arcue.botany.unimelb.edu.au](http://www.arcue.botany.unimelb.edu.au)

Greening Australia [www.greeningaustralia.org.au](http://www.greeningaustralia.org.au)

Green Roof Technical Manual [www.yourhome.gov.au](http://www.yourhome.gov.au)

## 9. Innovation

### Objective:

- to encourage innovative technology, design and processes in all development, which positively influence the sustainability of buildings.

Issues	Applicant's Design Responses	Council Comments	CAR*
Significant Enhancement to the Environmental Performance	-	-	-
Innovative Social Improvements	-	-	-
New Technology	-	-	-
New Design Approach	-	-	-
Others	Comprehensive climate change adaptation plan for the development.	-	-

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### References and useful information:

SDAPP Fact Sheet: [9. Innovation](#)

Green Building Council Australia [www.gbca.org.au](http://www.gbca.org.au)

Victorian Eco Innovation lab [www.ecoinnovationlab.com](http://www.ecoinnovationlab.com)

Business Victoria [www.business.vic.gov.au](http://www.business.vic.gov.au)

Environment Design Guide [www.environmentdesignguide.com.au](http://www.environmentdesignguide.com.au)

## 10. Construction and Building Management

### Objective:

- to encourage a holistic and integrated design and construction process and ongoing high performance

Issues	Applicant's Design Responses	Council Comments	CAR*
<b>Building Tuning</b>	Comprehensive commissioning and tuning to all building services.	-	1
<b>Building Users Guide</b>	A building users' guide in digital format available on intranet explaining optimal usage of sustainability features within the development including rainwater tanks, energy systems, etc.	-	1
<b>Contractor has Valid ISO14001 Accreditation</b>	No specific information has been provided.	-	1
<b>Construction Management Plan</b>	An Environmental Management Plan will be developed by the building contractor to monitor and control activities undertaken during construction.	-	1
<b>Others</b>	-	-	-

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### References and useful information:

SDAPP Fact Sheet: [10. Construction and Building Management](#)

ASHRAE and CIBSE Commissioning handbooks

International Organization for standardization – ISO14001 – Environmental Management Systems

Keeping Our Stormwater Clean – A Builder's Guide [www.melbournewater.com.au](http://www.melbournewater.com.au)



# Applicant Response Guidelines

## Project Information:

Applicants should state the property address and the proposed development's use and extent. They should describe neighbouring buildings that impact on or may be impacted by the development. It is required to outline relevant areas, such as site permeability, water capture areas and gross floor area of different building uses. Applicants should describe the development's sustainable design approach and summarise the project's key ESD objectives.

## Environmental Categories:

Each criterion is one of the 10 Key Sustainable Building Categories. The applicant is required to address each criterion and demonstrate how the design meets its objectives.

## Objectives:

Within this section the general intent, the aims and the purposes of the category are explained.

## Issues:

This section comprises a list of topics that might be relevant within the environmental category. As each application responds to different opportunities and constraints, it is not required to address all issues. The list is non-exhaustive and topics can be added to tailor to specific application needs.

## Assessment Method Description:

Where applicable, the Applicant needs to explain what standards have been used to assess the applicable issues.

## Benchmarks Description:

The applicant is required to briefly explain the benchmark applied as outlined within the chosen standard. A benchmark description is required for each environmental issue that has been identified as relevant.

## How does the proposal comply with the benchmarks?

The applicant should show how the proposed design meets the benchmarks of the chosen standard through making references to the design brief, drawings, specifications, consultant reports or other evidence that proves compliance with the chosen benchmark.

## ESD Matters on Architectural Drawings:

Architectural drawings should reflect all relevant ESD matters where feasible. As an example, window attributes, sun shading and materials should be noted on elevations and finishes schedules, water tanks and renewable energy devices should be shown on plans. The site's permeability should be clearly noted. It is also recommended to indicate water catchment areas on roof- or site plans to confirm water re-use calculations.