



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 *Residential 1. Ten or more dwellings and Non-residential 2. 1000m² or greater of new floor area*.

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 NH Architecture (RFI 20.02.2018), the accompanying SMP, prepared by Norman Disney Young (Rev F 14th February 2018).



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Assessment Summary:

Responsible Planner:	Amy Hodgen		
ESD Advisor:	Euan Williamson		
Date:	05.04.2018	Planning Application No:	PLN17/0978
Subject Site:	626 Heidelberg Road, Alphington		
Site Area:	Approx. 22,252m ²	Site Coverage:	100%
Project Description:	Mixed use precinct with supermarket, offices, school and residential towers comprising 281 dwellings.		
Pre-application meeting(s):	None.		

The standard of the ESD does not meet 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:

- Average 6.5 Star (minimum) NatHERS ratings for dwellings. 10% improvement in NCC energy efficiency requirements for all non-residential components.
- Good access to daylight and natural ventilation to all dwellings, office and community centre/school.
- An 85kWp solar PV array to contribute to onsite electricity consumption.
- Energy efficient heating/cooling, hot water and lighting.
- Energy efficient hot water with at least 20% solar thermal contribution.
- Water efficient fixtures and taps.
- 484 bicycle parking spaces plus end of trip facilities provided.
- Car share spaces provided.
- Electric vehicle charging infrastructure provided.

(2) Application ESD Deficiencies:

- A MUSIC model has been submitted that relies heavily on a proprietary SPEL stormwater product filtering runoff from approximately 14,180m² of roof, road and paved areas, as well as approximately 8,072m² of roof connected to 110,000 litres of rainwater storage for toilet flushing. The SPEL inputs into MUSIC are 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. Unfortunately, council cannot accept this proposal relying heavily on SPEL proprietary products. Recommend a different approach, or provide evidence that these proprietary products are effective in local Victorian conditions. The SMP states the tank will be 60,000 and the Stormwater Management Plan states 110,000 litres in total, please review and make consistent.
- There are areas of east, west and north facing glazing exposed to summer sun angles and high levels of summer solar heat gain, specifically the southern end of the 'Living Matrix' and the eastern end of the 'Urban Anchor'. Recommend additional external shading systems on all east, west and north facing facades exposed to summer sun angles to reduce cooling loads and improve thermal comfort. Please provide sample NatHERS ratings for dwellings and demonstrate that cooling loads on all dwellings do not exceed the 21MJ/m² threshold required by BADS Standard D6.



(3) Outstanding Information:

- SMP states that there are 446 secure bicycle parking spaces across the site for residents, staff and visitors, but the plans states there are 484. There also appear to be minor discrepancies between the Bicycle Parking Schedule figures and the number drawn on plans. Please review and ensure that all relevant documents include the same correct total of 484 bicycle parking spaces.

(4) ESD Improvement Opportunities

- Recommend energy efficient HVAC systems within one star of the most efficient, or within 85% of the best energy performing unit available at the time of construction.
- Recommend separate water metering for all major common area uses, tenancies and dwellings.
- Recommend comprehensive commissioning and tuning of all major appliances and building services.
- Recommend that an Environmental Management Plan monitor and control activities undertaken during construction.
- Consider using recycled materials in products such as insulation across the project.
- Consider specifying concrete and steel with a recycled content.
- Consider FSC certified sustainable timber for all timber uses onsite.
- Consider providing composting system for organic residential waste.

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	Access to natural ventilation is good to all dwellings.	-	1
Daylight & Solar Access	Good daylight access good to all dwellings, office and community centre/school.	-	1
External Views	External views from all dwellings.	-	1
Hazardous Materials and VOC	95% of all paints, adhesives and sealants will be low-VOC type, and 95% of engineered timber products will have low/no formaldehyde content.	-	1
Thermal Comfort	<p>Good thermal comfort is determined through a combination of good access to ventilation, balanced passive heat gains and high levels of insulation.</p> <p>The application proposes:</p> <ul style="list-style-type: none"> - Good natural ventilation - Little shading proposed - Reasonable thermal efficiency standards. 	Please refer to section on, <i>NCC Energy Efficiency Requirements Exceeded and Effective Shading</i>	3

* 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
 Australian Green Procurement www.greenprocurement.org
 Residential Flat Design Code www.planning.nsw.gov.au
 Your Home 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*
NCC Energy Efficiency Requirements Exceeded	Average 6.5 Star (minimum) NatHERS ratings for dwellings. 10% improvement for all non-residential components.	-	1
Hot Water System	Energy efficient hot water with at least 20% solar thermal contribution.	-	1
Peak Energy Demand	Peak demand reduced through various initiatives.	-	1
Effective Shading	There are areas of east, west and north facing glazing exposed to summer sun angles and high levels of summer solar heat gain, specifically the southern end of the 'Living Matrix' and the eastern end of the 'Urban Anchor'	Recommend additional external shading systems on all east, west and north facing facades exposed to summer sun angles to reduce cooling loads and improve thermal comfort. Please provide sample NatHERS ratings for dwellings and demonstrate that cooling loads on all dwellings do not exceed the 21MJ/m ² threshold required by BADS Standard D6.	2
Efficient HVAC system	No information has been provided.	Recommend energy efficient systems within one star of the most efficient, or within 85% of the best energy performing unit available at the time of construction.	4
Efficient Lighting	Energy efficient LED lighting 20% improvement on NCC minimum requirements across 90% of the NLA.	-	1
Electricity Generation	An 85kWp solar PV array to contribute to onsite electricity consumption.	-	1
Other	-	-	-

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References and useful information:

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

House Energy Rating www.makeyourhomegreen.vic.gov.au

Building Code Australia www.abcb.gov.au
Window Efficiency Rating Scheme (WERS) www.wers.net
Minimum Energy Performance Standards (MEPS) www.energyrating.gov.au
Energy Efficiency 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 throughout, including: <ul style="list-style-type: none"> - 3 Star WELS showers <9 litres/min - 4 Star WELS toilets - 5 Star WELS tapware - 5 Star WELS dishwashers - 5 Star WELS washing machines - 6 Star WELS urinals 	-	1
Water for Toilet Flushing	A 60,000 litre rainwater tank connected to toilets for flushing and irrigation.	-	1
Water Meter	No information has been provided.	Recommend separate water metering for all major common area uses, tenancies and dwellings.	4
Landscape Irrigation	A 60,000 litre rainwater tank connected to toilets for flushing and 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
 Water Services Association of Australia www.wsa.asn.au
 Water Tank Requirement www.makeyourhomegreen.vic.gov.au
 Melbourne Water STORM calculator www.storm.melbournewater.com.au
 Sustainable Landscaping 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*
STORM Rating	<p>A MUSIC model has been submitted that relies heavily on a proprietary SPEL stormwater product filtering runoff from approximately 14,180m² of roof, road and paved areas, as well as approximately 8,072m² of roof connected to 110,000 litres of rainwater storage for toilet flushing.</p> <p>The SPEL inputs into MUSIC are 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.</p>	<p>Unfortunately, Council cannot accept this proposal relying heavily on SPEL proprietary products. Recommend a different approach, or provide evidence that these proprietary products are effective in local Victorian conditions.</p> <p>The SMP states the tank will be 60,000 and the Stormwater Management Plan states 110,000 litres in total, please review and make consistent.</p>	2
Discharge to Sewer	-	-	-
Stormwater Diversion	-	-	-
Stormwater Detention	-	-	-
Stormwater Treatment	-	-	-
Others	-	-	-

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References and useful information:

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

Melbourne Water STORM calculator www.storm.melbournewater.com.au

Water Sensitive Urban Design Principles www.melbournewater.com.au

Environmental Protection Authority Victoria www.epa.vic.gov.au

Water Services Association of Australia www.wsaa.asn.au

Sustainable Landscaping 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 specific information has been provided.	Consider using recycled materials in products such as insulation across the project.	4
Embodied Energy of Concrete and Steel	No specific information has been provided.	Consider specifying concrete and steel with a recycled content.	4
Sustainable Timber	All engineered timber will be FSC accredited.	Consider FSC certified sustainable timber for all timber uses onsite.	4
Design for Disassembly	No information has been provided.	Consider a small pallet of materials and construction techniques that can assist in disassembly.	4
Other	-	-	-

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References and useful information:

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

Building Materials, Technical Manuals www.yourhome.gov.au

Embodied Energy Technical Manual www.yourhome.gov.au

Good Environmental Choice Australia Standards www.geca.org.au

Forest Stewardship Council Certification Scheme www.fsc.org

Australian Green Procurement 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*
Minimising the Provision of Car Parks	Car parking in basement and podium levels.	-	1
Bike Parking Spaces	SMP states that there are 446 secure bicycle parking spaces across the site for residents, staff and visitors, but the plans states there are 484. There also appear to be minor discrepancies between the Bicycle Parking Schedule figures and the number drawn on plans.	Please review and ensure that all relevant documents include the same correct total of 484 bicycle parking spaces.	3
End of Trip Facilities	End of trip facilities provided.	-	1
Car Share Facilities	Car share spaces are visible on plans.	-	1
Electric vehicle charging	Electric vehicle charging infrastructure provided.	-	1

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References and useful information:

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

Off-setting Car Emissions Options www.greenfleet.com.au

Sustainable Transport www.transport.vic.gov.au/doi/internet/icy.nsf

Car share options www.yarracity.vic.gov.au/Parking-roads-and-transport/Transport-Services/Carsharing/

Bicycle Victoria 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	A Construction Waste Management Plan with a recycling/reuse target of 80% for construction and demolition waste.	-	1
Operational Waste Management	General waste and recycling via dual chutes. Hard waste storage area.	Consider providing a composting system for organic waste.	4
Storage Spaces for Recycling and Green Waste	Area for bins and chutes can be identified on the plans.	-	1
Others	-	-	-

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References and useful information:

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

Construction and Waste Management www.sustainability.vic.gov.au

Preparing a WMP www.epa.vic.gov.au

Waste and Recycling www.resourcesmart.vic.gov.au

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

www.environment.nsw.gov.au

Waste reduction in office buildings (2002) 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 to podium and balconies will enhance the ecological value of this site.	-	1
Heat Island Effect	No specific information has been submitted.	-	1
Communal Spaces	Residential common areas and landscaping.	-	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

Australian Research Centre for Urban Ecology www.arcue.botany.unimelb.edu.au

Greening Australia www.greeningaustralia.org.au

Green Roof Technical Manual 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	-	-	-

*** Council Assessment Ratings:**

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References and useful information:

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

Green Building Council Australia www.gbca.org.au

Victorian Eco Innovation lab www.ecoinnovationlab.com

Business Victoria www.business.vic.gov.au

Environment Design Guide 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*
Building Tuning	No information has been provided.	Recommend comprehensive commissioning and tuning of all major appliances and building services.	4
Building Users Guide	Building Users Guide will be provided to the residents and building users.	-	1
Contractor has Valid ISO14001 Accreditation	-	-	-
Construction Management Plan	No specific information has been provided.	Recommend that an Environmental Management Plan monitor and control activities undertaken during construction.	4
Others	-	-	-

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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



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.

