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.*

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 DKO (received 21st February 2020, and the accompanying SMP, prepared by Cundall (prepared 26th November 2019).

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Assessment Summary:

Responsible Planner:		Amy Hodgen	
ESD Advisor:		Euan Williamson	
Date:	29.5.2020	Planning Application No:	PLN19/0841
Subject Site:		81 Latrobe Avenue, Alphington	
Site Area:	Approx. 4,959m^2	Site Coverage:	100%
Project Description:		Twelve storey residential building.	
Pre-application meeting(s):		None.	

The standard of the ESD <u>is close to meeting</u> Council's Environmental Sustainable Design (ESD) best practice standard. *Should a permit be issued, 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:

- A 40 kWp solar PV array to contribute to onsite electricity consumption.
- A STORM report has been submitted that relies on runoff from approximately 2,223.4m^2 of roof connected to 70,000 litres of rainwater storage for toilet flushing (for dwellings with 240 bedrooms or eq.)
- Energy efficient heating/cooling, hot water and lighting.
- Water efficient fixtures and taps.
- SMP states that there are 273 secure bicycle parking spaces across the site for residents of 273 dwellings, plus 28 for visitors.

(2) Application ESD Deficiencies:

- Dwellings' access to natural ventilation and daylight is reasonable, but there are numerous internal corridors that will have poor air quality and lack access to natural ventilation and daylight. Strongly recommended that corridors are re-designed to enable access to natural ventilation and daylight. This will involve re-positioning and removing some bathrooms and bedrooms to accommodate the punch-through of corridors to the facades. In particular the southern end of Building B Levels 2-6 and the northeast end of Building A Levels1-5. Consider a full height connecting atrium between Building A and B allowing access to ventilation and daylight and improving amenity.
- Most of the sample NatHERS ratings comply with the maximum BADS Standard D6 for cooling loads (21MJ/m^2), except dwelling A12.02. Ensure that all dwellings meet the 21MJ/m^2 cooling threshold.

(3) Outstanding Information:

- Average 6.5 Star (minimum) NatHERS ratings for dwellings. BESS report sates 6.8 Star average and sample NatHERS reports are an average of 6.7 Stars. Please update the submission's documentation to have a consistent minimum 6.7 Star NatHERS, as demonstrated possible by the sample ratings provided.
- Upon close inspection of the elevation drawings, where some glazing operability is marked, it is not clear whether all bedrooms will have operable windows. Ensure that all habitable rooms have an operable window to allow access to natural ventilation.
- A 40kWp solar PV array to contribute to onsite electricity consumption. Please clearly mark the solar PV array capacity and location on the plans.

(4) ESD Improvement Opportunities

- There are large areas of east, west and north facing glazing exposed to summer sun angles and high levels of summer solar heat gain. 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.
- Recommend a solar thermal pre-heat to gas hot water with at least 20% solar thermal contribution.
- Heating and cooling of at least 3 Stars specified. 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
- Recommend providing electric vehicle charging infrastructure.
- Recommend comprehensive commissioning and tuning of all major appliances and building services.
- Consider FSC certified sustainable timber for all timber uses onsite.

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	Dwellings' access to natural ventilation is reasonable, (provided all habitable rooms have an operable window), but there are numerous internal corridors that will have poor air quality and lack access to natural ventilation.	Ensure that all habitable rooms have an operable window. Strongly recommended that corridors are re-designed to enable access to natural ventilation. This will involve re-positioning and removing some bathrooms and bedrooms to accommodate the punch-through of corridors to the facades. In particular the southern end of Building B L2-L6 and the northeast end of Building A L1-L5. Consider a full height connecting atrium between Building A and B allowing access to ventilation and improving amenity.	2
Daylight & Solar Access	Reasonable access to daylight to dwellings, but there are numerous internal corridors that will have no access to daylight.	Strongly recommended that corridors are re-designed to enable access to daylight. This will involve re-positioning and removing some bathrooms and bedrooms to accommodate the punch-through of corridors to the facades. In particular the southern end of Building B L2-L6 and the northeast end of Building A L1-L5. Consider a full height connecting atrium between Building A and B allowing access to daylight and improving amenity.	2
External Views	External views from all dwellings.	-	1
Hazardous Materials and VOC	All interior paints, adhesives and sealants will be low-VOC type	Recommend that all engineered timber products to have low/no formaldehyde content.	4
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: - Limited natural ventilation - Some shading through balcony overhangs and wingwalls - Average thermal efficiency standards.	Please refer to section on, *NCC Energy Efficiency Requirements Exceeded* and *Effective Shading*	2

*** 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. BESS report sates 6.8 Star average and sample NatHERS reports are an average of 6.7 Stars.	Please update the submission's documentation to have a consistent minimum 6.7 Star NatHERS, as demonstrated possible by the sample ratings provided.	3
Hot Water System	Energy efficient gas hot water.	Recommend a solar thermal contribution of at least 20%.	4
Peak Energy Demand	Peak demand reduced through various initiatives.	-	1
Effective Shading	Most of the sample NatHERS ratings comply with the maximum BADS Standard D6 for cooling loads (21MJ/m^2), except dwellingsA12.02. Ensure that all dwellings meet this cooling threshold. There are large areas of east, west and north facing glazing exposed to summer sun angles and high levels of summer solar heat gain.	Ensure that all dwellings meet the 21MJ/m^2 cooling threshold. 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.	2
Efficient HVAC system	At least 3 Stars for both heating and cooling.	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.	-	1
Electricity Generation	A 40kWp solar PV array to contribute to onsite electricity consumption.	Please clearly mark the solar PV array capacity and location on the plans.	3
Other	-	-	-

*** 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: 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: - 3 Star WELS showers <6 litres/min - 4 Star WELS toilets - 5 Star WELS tapware - 4 Star WELS dishwashers	Recommend minimum 5 WELS Star dishwashers and 5 Star WELS washing machines if provided.	4
Water for Toilet Flushing	A 70,000 litre rainwater tank connected to all toilets for flushing (240 bedrooms).	-	1
Water Meter	Separate meters for dwellings.	-	1
Landscape Irrigation	Water efficient irrigation	-	1
Other	-	-	-

*** 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: 3. Water Efficiency
Water Efficient Labelling Scheme (WELS) www.waterrating.gov.au
Water Services Association of Australia www.wsaa.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	A STORM report has been submitted that relies on runoff from approximately 2,223.4m^2 of roof connected to 70,000 litres of rainwater storage for toilet flushing (for dwellings with 240 bedrooms or eq.)	-	1
Discharge to Sewer	-	-	-
Stormwater Diversion	-	-	-
Stormwater Detention	-	-	-
Stormwater Treatment	-	-	-
Others	-	-	-

*** 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: 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	95% of road base recycled materials. 10% recycled gypsum in plasterboard.	-	1
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 structural timber will be FSC or AFS accredited. 95% of all timber plantation or recycled.	Consider FSC certified sustainable timber for all timber used 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	-	-	-

*** 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: 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	Basement car parking.	-	1
Bike Parking Spaces	SMP states that there are 273 secure bicycle parking spaces across the site for residents of 273 dwellings, plus 28 for visitors.	-	1
End of Trip Facilities	NA	-	1
Car Share Facilities	No information provided.	-	1
Electric vehicle charging	No information provided.	Recommend providing electric vehicle charging infrastructure.	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: 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 70% for construction and demolition waste.	-	1
Operational Waste Management	General waste and recycling via dual chutes. Organic/green waste storage area and management system.	-	1
Storage Spaces for Recycling and Green Waste	Area for bins and chutes can be identified on the plans.	-	1
Others	-	-	-

*** 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: 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	24% of site area vegetated with 90% local native vegetation.	-	1
Heat Island Effect	No specific information has been submitted.	-	1
Communal Spaces	Residential common areas and landscaping.	-	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: 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:**

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: 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	An Environmental Management Plan will monitor and control activities undertaken during construction.	-	1
Others	-	-	-

*** 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: 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.