# Sustainable Design in the Planning Process (SDAPP)

Yarra Ranges Council’s planning permit application process includes Environmentally Sustainable Development (ESD) considerations. Completing a Sustainable Design Assessment as part of the Planning Process is:

* A practical approach to assessing sustainable development matters during the planning permit application process.
* The consistent inclusion of key environmental performance considerations into the planning approvals process.
* Your guide to achieving more sustainable building outcomes for the long-term benefit of the wider community.

Planning permit applications with Yarra Ranges Council which meet certain triggers are now required to include a Sustainable Design Assessment (SDA), as detailed in the Local Policy Clause 22.03. You will be required to submit an SDA if it meets one of the following categories:

* Residential – three to nine dwellings
* Non-residential - 500m2 to 1000m2 of non-residential Gross Floor Area (GFA) or alterations and additions of between 500m2 and 1000m2

Please refer to the Sustainable Management Plan (SMP) information for building sizes exceeding these categories. All information on the SDAPP program can be obtained on the Yarra Ranges Council website.

# What is a Sustainable Design Assessment (SDA)?

A Sustainable Design Assessment (SDA) is a document that sets out the sustainable design features of a proposed development.

This template is designed to provide guidance on how to prepare an SDA report. The document outlines objectives, ESD issues and the 10 sustainable development categories to be addressed. You can either prepare your own report or use this template by inserting your own responses.

Alongside this template (or in place of it), you must complete a Built Environment Sustainability Scorecard (BESS) report. The free BESS report can be used solely or in conjunction with this template to meet the Sustainable Design Assessment requirements.

It is important that all relevant initiatives are clearly annotated on architectural drawings. 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.

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| **NOTE**  The tables on the following pages contain examples of how you might meet sustainable design requirements. You need to replace this text with your own. |

# Project Information

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| Project Description |
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| Property Address |
|  |
| Site Area |
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| Site Coverage (building and hard landscaping areas) |
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| Proposed Building Areas (GFA m2): |
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| Tools engaged for Sustainable Design Assessment |
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## 1. Indoor Environment Quality (IEQ)

Purpose:

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

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| Issues | Design Responses | |
| Daylight | *Describe how habitable rooms receive enough daylight throughout the day. Balancing daylight requirements and heat gain in summer by minimising excessive glazing to the west.*  Example initiatives:   * Prioritising north facing orientation for habitable rooms. * Installing operable skylights (not facing west) or daylight tubes to increase natural light levels where direct access is low | |
| Ventilation | *Describe how rooms can be sufficiently ventilated (preferably naturally but where this is impractical, mechanically) and provide occupants with quality fresh air. Selecting window types that maximise ventilation and meet mixed mobility abilities.*  Example initiatives:   * Operable windows maximised including to bathrooms, studies, hallways and stairwells. * Using a minimum of 2 operable windows or doors for all rooms for passive ventilation. * Using ceiling fans to increase air movement. | |
| Thermal Comfort | *Describe how habitable rooms sufficiently insulated, shaded and conditioned to ensure comfortable temperatures throughout the year. Detail how shading is implemented for east, north and west faced glazing, including glazed doors.*  Example initiatives:   * Using ceiling fans to increase air movement and avoid reliance on air conditioning. * Provide external operable shade devices to east, north and west facing windows and glazed doors. | |
| Air Quality | *Describe commitment to choose building materials and finishes with low levels of Volatile Organic Compounds (VOC) and other hazardous components.*  For example: Low VOC adhesives and paints used | |
| Others |  |  |

Documenting initiatives (e.g. include on plans):

* Glazing colour on elevation drawings.
* Draw how all windows open on elevation plans.
* Skylights on Roof Plan drawings.
* Show window openings on elevation drawings
* Mark ceiling fans on floor site plans.
* Mark shading devices with dimensions on plans and elevations.

More information can be found in the [Indoor Environment Quality fact sheet >](https://yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-indoor-environment-quality-yrc.pdf)

# 2. Energy Efficiency

Purpose:

* Maximising passive design through improvements to the building shell
* Ensuring efficient use of energy through highly efficient mechanical and electrical system components.
* Reducing operating greenhouse gas emissions and energy costs.
* Encouraging uptake of local renewable energy generation.

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| Issues | Design Responses |
| BCA Energy  Efficiency requirements  exceeded | *Provide preliminary energy ratings NatHERS for all thermally unique dwellings and for non-residential, NABERS Energy, or provide information demonstrating how energy efficiency requirements will be achieved. Enclose preliminary energy rating.*  Example initiatives:   * Double glazing as a minimum to all windows * Use insulated, thermally broken window and door frames * Set high insulation levels to ceilings, walls and floor (including insulating the slab if this is the floor type) * Orientate dwellings to the north |
| Hot Water System | *Describe hot water system type and efficiency rating.* *Indicate location and size on plans.*  Example initiatives:   * High efficiency electric heat pump hot water system |
| Efficient Shading | *Provide description and show shading elements on plans, finishes schedule and elevations.*  Example initiatives:   * Use fixed, external horizontal shading (e.g. eaves) to north facing windows and doors to meet 25% formula from Sustainability Victoria ‘Energy Smart Housing Manual’ page 41. |
| Efficient heating and cooling system | *Describe commitment to choose heating and cooling options with high efficiency ratings. Indicate equipment location and size on plans.*  Example initiatives:   * Equipment chosen within 1 star of the best available |
| Efficient Lighting | *Provide description and list the main habitable areas considering lighting indicating how min. standards are being exceeded (e,g. residential living areas should not exceed 4w/m2)*  Example initiatives:   * LED lighting throughout the development * Motion sensor or timer installed for outdoor lighting |
| Electricity Generation | *Describe on-site electricity generation including size. Indicate inverter location and size on plans.*  Example initiatives:   * Solar PV system, sized to meet onsite electrical demands |
| Others | Example initiatives:   * Provide clotheslines for each dwelling |

Documenting initiatives (e.g. include on plans):

* Annotate ‘DG’ (Double Glazed) on floor plans and elevations
* Hot water service location, size and type
* Mark shading devices with dimensions on plans and elevations.
* Heating and Cooling system size and location
* Mark solar PV on plans
* Show clothesline size and location on plans

# More information can be found in the [Energy Efficiency fact sheet >](https://yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-energy-efficiency-yrc.pdf)

# 3. Water Efficiency

Purpose:

* Ensuring the efficient use of water and minimising costs from water use
* Supporting the collection and reuse of alternative water sources, e.g. grey water, rainwater and stormwater

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| Issues | Design Responses |
| Minimising Amenity Water Demand | *Provide water efficient appliances including shower heads, taps and toilet cisterns within one star of the best available.*  Example initiatives include:   * 4 star WELS rated showerheads * 4 star WELS rated toilets * 5 or 6 star WELS rated tap fittings |
| Water for Toilet Flushing | *Describe water source for toilet flushing. Indicate rain water tank’s location and size on plans if applicable.*  Example initiative includes:   * Rainwater tank connected for toilet flushing |
| Water Meter | *Provide information on how any multiple unit developments will be metered.* |
| Landscape Irrigation | *Provide description and water source for landscape irrigation. Show irrigation source on relevant floor/roof/site plan drawing or landscape plan if submitted*  Example initiatives include:   * Gardens irrigation fed from rainwater tank * Low water use plant selection creating water efficient landscaping * Highly water efficient irrigation system installed (drip irrigation with timers and rain sensors) |
| Other | Example initiatives:   * Using tank water for pool top-up (if installing a swimming pool) * Locating hot water service close to the point of use (reducing heat loss through pipes) * Locating water use areas adjacent to each other (e.g. bathrooms, laundries, kitchen) * Using alternative water sources for irrigation, e.g. grey water for plants |

Documenting initiatives (e.g. include on plans):

* Rainwater tank size and location marked on plans (if applicable).
* In notes box – star rating of fixtures and equipment
* Landscape plans detailing low water use plant selection

# More information can be found in the [Water Efficiency fact sheet >](https://www.yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-water-efficiency-yrc.pdf)

# 4. Stormwater Management

Purpose:

* Reducing runoff from hard and impervious surfaces to improve the quality of waterways
* Maximising the re-use of stormwater onsite
* Demonstrate compliance with Urban Stormwater Management Best Practice Standards for Water Quality

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| Issues | Design Responses |
| Site permeability | *Provide details of permeable and impermeable surfaces within the site area.*  Examples include:   * Permeable pavement * Landscaped/garden areas * Lawn along centre of driveways |
| Rainwater tanks | *Provide details of any water tanks including area of roof run-off, size of tank and proposed water uses (eg. toilet flushing, garden).* *Indicate rain water tank’s location and size on plans (if applicable).*  Examples include:   * Centralised underground tank * Tank for each dwelling connected to toilets and laundry |
| Porous paving | *Provide details of any porous paving including land area and type. Indicate details on plans (if applicable).* |
| Rain gardens or swales | *Provide details of any rain gardens or swales including size of feature and area of run-off. Indicate rain garden or swale location and size on plans (if applicable).* |
| Other | *Demonstrate compliance with best practice standards.* |

Documenting initiatives (e.g. include on plans):

* STORM report (minimum 100% score) or MUSIC modelling
* Indicate rain water tank’s location and size on plans (if applicable).
* Mark permeable paving on plans
* Mark any WSUD (e.g. Rain gardens and swales) elements on plans.

# More information can be found in the [Stormwater Management fact sheet >](https://www.yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-stormwater-management-yrc.pdf)

# 5. Building Materials

Objectives:

* To minimise the environmental impact of materials used by encouraging the use of materials with a favourable lifecycle assessment. Taking into consideration the recycling/reuse potential of materials, embodied energy, and environmental toxicity for humans and biodiversity.
* Reusing existing materials where possible, limiting the use of new materials where possible, reducing the associated emissions from manufacture additional products and materials.
* Selecting durable materials to ensure longevity and increased lifespan of all products.

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| Issues | Design Responses |
| Retention of existing structure and materials | *Provide a description of the intended re-use of existing structures and /or materials within the proposed design. 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 and or disassembled once they have finished their purpose for this design. Show on relevant floor/site/demolition plans and elevations/sections.* |
| Embodied Energy | *Provide a description of intended materials to be used that have sustainable production processes (including low embodied energy etc)*  Example initiative:   * Inclusion of supplementary materials in concrete mix (e.g. flyash, slag) |
| Sustainable Timber | *Provide a description of intended sustainable timber use and list their independent sources of verification (eg. forest stewardship council accredited).*  Example initiative:   * All timber will be from accredited plantations - either FSC or PEFC/AFS. |
| Other |  |

Documenting initiatives (e.g. include on plans):

* Mark any existing structures being retained on plans.
* Note any supplementary materials, accreditation schemes and recycling of materials in notes box on plans

# More information can be found in the [Building Materials fact sheet >](https://www.yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-building-materials-yrc.pdf)

# 6. Transport

Objectives:

* To ensure that the built environment is designed to promote the use of walking, cycling and public transport (in that order).
* To minimise car dependency
* To promote the use of low emission vehicle technologies and supporting infrastructure

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| Issues | Design Responses |
| Minimising the Provision of Car Parks for Conventional  Vehicles | *Provide a description of any parking dispensation being sought and provide details for consideration.*  Example initiatives:   * Including dedicated motorcycle spaces * Including dedicated EV charging spaces |
| Providing Bike Storage | *Provide the total number of bike storage facilities and ratio to the total number of building users and guests. Show on relevant floor/site plans*  Example initiatives:   * Bike storage, not above bonnet, for each dwelling * Secure bike storage for non-residential developments |
| End of trip facilities | *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*  Example initiatives:   * End of ride facilities including lockers and showers, sized to staff ratio |
| Car Sharing | *Provide a description of any on or off-site car share service and show on relevant site plans* |
| Other | Examples include:   * Infrastructure (Junction box/ Power Point) in the garage to accommodate infrastructure for charging electric vehicles in future. * Walkscore for residential development * Green travel plan, outlining active transport routes for development |

Documenting initiatives (e.g. include on plans):

* Mark any specialised parking spaces on plans
* Mark bike storage on plans
* Mark end of ride facilities on plans
* Mark EV charging infrastructure on plans

More information can be found in the [Transport fact sheet >](https://www.yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-transport-yrc.pdf)

# 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 and durability of building materials.
* To ensure sufficient space is allocated for future change in waste management needs, including (where possible) composting and green waste facilities.
* For multi-unit developments (MUD), complying with the *Sustainability Victoria Better Practice Guide Waste Management and Recycling in Multi-unit Developments*

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| Issues | Design Responses |
| Storage Spaces for Recycling and Green Waste | *Provide details of separation of waste streams including recycling, green waste and food waste. Indicate space allocation for waste streams on plans.* |
| Construction Waste Management Plan (WMP) | *Provide description of how construction waste will be managed through the construction process including material sorting, disposal and targeted recycling rates*  Example initiative:   * 80% demolished materials will be recycled or repurposed. |
| Operation Waste Management Plan | *Provide description of how operational waste will be managed through the occupied life of the building.*  Example initiative:   * Provision of source separation bins internally to sort waste onsite |
| Others |  |

Documenting initiatives (e.g. include on plans):

* Include in notes any operational waste processes
* Note bin space on plans
* Include in notes construction waste recycling/reuse targets

# More information can be found in the [Waste Management fact sheet >](https://www.yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-waste-management-yrc.pdf)

# 8. Urban Ecology

Objectives:

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

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| Issues | Design Responses |
| Landscaped areas to be designated | *Provide a description of all new, existing retained and existing demolished landscaped areas and indicate how the design has enhanced the sites biodiversity. Show on relevant site/floor/landscape plans.*  Example initiatives:   * Food production space marked on plans * High % of site vegetated |
| 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.*  Example initiatives:   * Drought tolerant species selected for landscaped areas * Low water use plant selection creating water efficient landscaping |
| Season heat control | *Provide a description of how the design has used vegetation to control seasonal heat gain or glare and ventilation. Show on relevant site/floor/landscape plans.*  Example initiatives:   * Green wall or façade included in development * Green Roof included in development |
| Others | *Encouraging growing vegetation in private open space (balcony/courtyard)*  Example initiative:   * Inclusion of tap and floor drain for balconies/courtyards |

Documenting initiatives (e.g. include on plans):

* show landscape areas on plans or include landscape plan
* site and/or floor plans show water supply and drainage points
* Mark any green walls, façade, or roof areas on plans

# More information can be found in the [Urban Ecology fact sheet >](https://www.yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-urban-ecology-yrc.pdf)

# 9. Innovation

Objective:

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

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| Issues | Design Responses |
| Significant Enhancement to the Environmental Performance | *Provide a description of how design exceeds best practice standards in one or more of the other 9 categories.* |
| Innovative Social Improvements | *Provide a description of how the design has helped implement innovative social improvements (eg. shared composting and communal garden areas).* |
| New Technology | *Provide a description of how the design implements unique/new methods and strategies to enhance design outcomes.* |
| New Design  Approach | *Provide a description of how the design implements an innovative new design approach.* |
| Others |  |

Documenting initiatives (e.g. include on plans):

* Include any innovation initiatives in notes box and mark on plans accordingly

More information can be found in the [Innovation fact sheet >](https://www.yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-innovation-yrc.pdf)

# 10. Construction and Building Management

Objective:

* To encourage a holistic and integrated design and construction process and ongoing high performance
* Committing early to environmental targets and initiatives

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| Issues | Design Responses |
| Building Tuning | *Provide a description of how the designs building systems are managed to ensure optimal efficiency (where fitted).*  Example initiative:   * Building Management System controlling HVAC, lighting, renewable energy systems etc. |
| Building Users’ Guide | *Provide a description of intent to provide building occupants with a user’s guide that explains the ESD principles of the building.* |
| Environmental credentials of project team | *Provide a description of any environmental credentials that the project team may have (i.e. Contractor has valid ISO14001 environmental management accreditation, Green Star Accredited Professional, Certified Green Plumber etc.*  Example initiative:   * ESD professional engaged for pre-application meeting |
| Environmental Management Plan; Construction and Operation | *Provide a description of any Environmental Management Plans that intend to be implemented during operation phase.* |
| Other | *Providing thermal modelling to inform use of passive design at the early design stage*  Example initiatives:   * Thermal Performance Modelling for thermally unique dwellings/buildings |

Documenting initiatives (e.g. include on plans):

* Include in notes box any building management initiatives
* Thermal Performance Modelling, e.g. NatHERS for dwellings

More information can be found in the [Construction and Building Management fact sheet >](https://www.yarraranges.vic.gov.au/files/assets/public/webdocuments/build-develop/planning-permits/sda-construction-building-management-yrc.pdf)

**PLEASE NOTE: the example initiatives included in this template are not exhaustive and applicants are encouraged to use appropriate sustainable design tools, such as** [**BESS**](https://bess.net.au/)**, to investigate additional strategies they can use in their development.**