4.6.7 Sustainable Development Code

Purpose

The purpose of this Code is to enhance the sustainability of development by increasing the extent to which it:

- protects the environment, including reducing greenhouse gas emissions, saving energy, conserving water and minimising waste; and
- enhances the economic, physical and social wellbeing of Shire's residents and communities, including lifecycle affordability, accessibility, safety and security.

Applicability

This Code applies to all assessable Material Change of Use, involving new Building Work other than minor alterations to an existing building, excluding the following uses:

- Caretaker's Residence,
- Car Park,
- Cemetery,
- Extractive Industry,
- Home Activity,
- Home Based Business (excluding Bed & Breakfast, Forest Stay & Host Farm Accommodation)
- Home Industry,
- House,
- Industry,
- Off Premise Advertising Device,
- Outstation/Seasonal Camp,
- Park & Open Space,
- Primary Industry,
- Private Forestry,
- Service Industry (excluding associated office), and
- Telecommunications Facility

Elements of the Code

Energy Efficiency

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
P1 Buildings are designed and sited to: ▪ maximise the thermal comfort achieved within the building using passive design measures; and ▪ minimise the need for energy reliant cooling appliances to achieve accepted levels of thermal comfort.	A1.1 For residential buildings, each dwelling unit achieves a minimum 5 star BERS™ or NatHERS™ (or equivalent) energy rating. OR A1.2 For residential buildings: (a) all door openings and windows in habitable rooms that face between north and south east and south west and north are fully shaded by adjustable external shutters or blinds, and (b) glazed windows or door assemblies have a minimum WERS[51] Rating of 3 stars for cooling, and (c) all external walls (excluding windows and other glazing) achieve an overall R-value not less than R1.5, and (d) all ceilings (excluding garages, open verandas and carports) achieve an overall R-value of R3.0, and (e) all habitable rooms have: • have a window or door in opposite walls that are open-able to the outside; or • have a direct flow path from an open-able window through the doorways or other openings within the dwelling unit to another window or opening to the outside; Or • open directly onto an unobstructed breezeway that is a minimum of 900 mm wide and open-able at both ends with a minimum 1.5m^2 opening;

[51] **"WERS" means the Window Energy Rating Scheme®. For details about WERS, see www.wers.net .**

		Or • have a minimum ceiling height of 2.7m and at least one ceiling fan. A1.3 For non-residential buildings: (a) glazed windows or door assemblies have a minimum WERS[52] Rating of 3 stars for cooling, and (b) all external walls (excluding windows and other glazing) achieve an overall R-value not less than R1.5, and (c) all ceilings (excluding garages, open verandas and carports) achieve an overall R-value of R3.0.
P2	Hot water systems support the efficient use of natural resources and minimise consequent pollution such as greenhouse gas emissions.	A2.1 For all buildings with individual hot water systems installed in each dwelling unit or tenancy, all hot water systems installed comprise: (a) a system with a minimum of 24 Renewable Energy Certificates, or (b) a natural gas system, or (c) a liquid petroleum gas (LPG) system with a 5 star AGA Energy Rating Label. A2.2 For all buildings with centrally installed hot water systems: (a) a low NO_x gas water heating system/s supply hot water to all dwelling units or tenancies, or (b) solar water heaters supply hot water to all dwelling units or tenancies where less than 25% of water heating is provided by booster units,

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			or (c) electric heat pump water heaters supply hot water to all dwelling units or tenancies, or (d) a gas-fired cogeneration or fuel cell unit is installed which supplies electricity and uses waste heat for cooling/heating and hot water.
P3	Where practicable, and consistent with density and design provisions, residents should have access to a non-mechanical clothes drying area: (a) taking advantage of natural ventilation; and (b) receiving ample sunlight, in a manner that does not impair visual amenity. .	No Acceptable Solution	
P4	Cooking appliances are energy efficient.	A4.1	For residential buildings, each dwelling unit has: (a) a gas cook-top installed with a range hood; and (b) a gas oven with appropriate ventilation; or (c) a fan-forced electric oven
P5	All electrical appliances intended to be installed as standard into any residential building shall meet a minimum standard of 4 stars in accordance with the Australian Energy Rating Label.	A5.1	All: • Dishwashers; • Clothes dryers; • Clothes washers; • Airconditioners; and • Refrigerators/freezers where installed with the development, shall meet a minimum 4 star rating in accordance with the Australian Energy Rating Label.

P6	Lighting is energy efficient.	A6.1	For residential buildings: (a) The minimum circuit efficacy for all common area lighting is 75 lumens per watt. (b) All common area lighting is fitted with automatic controllers. (c) Kitchens and living areas are fitted with energy efficient light fixtures such as fluorescent lighting. A6.2 For Business Facilities, the average lighting power density does not exceed 10 watts per square metre. A6.3 For Shops and Shopping Facilities, the average lighting power density does not exceed 23 watts per square metre. A6.4 Individual tenancies within non-residential buildings are fitted with energy efficient light fixtures such as fluorescent lighting.
P7	Air conditioning, where not covered by an Australian Energy Rating Label, is energy efficient.	A7.1	Air conditioning units or systems comply with the minimum energy performance requirements specified in the Australian/New Zealand Standard AS/NZS 3823.2.2003.

Water Conservation and Reuse

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
P8 Rainwater harvesting systems are incorporated into residential and non-residential buildings to ensure collection, treatment and reuse of rainwater on-site to reduce run-off and demand on the potable water supply. Internal fixtures supplied from a rainwater tank must have a continuous supply of water.	A8.1 All residential buildings provide rainwater storage tank/s on-site fitted with a first flush device and vermin-proof mesh strainer on the inlet and that has a capacity of: (a) 30,000 litres per dwelling unit where located in the Rural Planning Area or the Rural Settlement Planning Area, or (b) 5,000 litres per dwelling unit where located in any other Planning Area. All non-residential buildings provide rainwater storage tank/s on-site fitted with a first flush device and vermin-proof mesh strainer on the inlet and that has a capacity of 5,000 litres per toilet/urinal unit. A8.2 The rainwater tank is plumbed for external use for irrigation and pool top up and internal use for toilet cisterns and washing machine cold water taps. A8.3 A rainwater tank has – (a) An automatic switching device providing supplementary water from the reticulated town water supply; or (b) A trickle top up system, providing supplementary water from the reticulated town water supply with – (i) A minimum flow rate of 2 litres per minute and a maximum flow rate of 4 litres per minute; and (ii) Top up valves installed in an accessible location; and

	(iii) A storage volume of the reticulated town water supply top up shall be no more than and no less than 1000 litres A8.4 A backflow prevention device is installed to protect the potable water within the reticulated town water supply system in accordance with AS/NZS 3500:2003 Plumbing and Drainage.
P9 Plumbing fittings must support the efficient use of water.	A9.1 All sink, tub or basin taps or mixers have a certified AAA Water Conservation Rating. A9.2 All toilets have: (a) 4 litre or less average flush cisterns (when calculated in accordance with Australian/New Zealand Standard AS/NZS 6400:2003), and (b) matched pans. A9.3 All showers have thermostatic mixers.

Waste Minimisation

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
P10 Site and building design must facilitate efficient sorting and disposal to maximise recycling opportunities.	A10.1 For residential buildings, each dwelling unit has separated, built-in temporary storage for recyclable materials and general waste.

	A10.2 All buildings include a refuse bin storage area: (a) with sufficient capacity for the collection of recyclable materials and general refuse, and (b) located for convenient use by all residents/tenants and readily accessible to waste management contractors, and (c) screened from view from public roads, is roofed and drained to sewer and includes a hose cock to provide for cleaning of refuse bins.

Landscaping and Irrigation

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
P11 Landscaping must facilitate sustainable tropical design by: • providing sufficient space for the retention and/or establishment of significant substantial vegetation, • using locally appropriate plant species, • using paving design and materials that minimise heat reflection and site run-off, • providing appropriate seasonal shade and passive cooling/heating of outdoor spaces throughout the year, • providing private open space located to maximise indoor/outdoor connections, and • design and plant selection to minimise water use and contribute to stormwater management.	A11.1 Impervious paving is limited to: (a) vehicle manoeuvring areas, (b) vehicle hard-stand areas, and (c) pedestrian movement paths. A11.2 Landscape and recreation areas are planted to: (a) ensure the penetration of prevailing north-east and south summer breezes and north-east winter morning sun, and (b) minimise exposure to the prevailing west and south-west winter winds, and (c) shade the western walls of buildings.

	A11.3 Opportunities for water infiltration on-site are maximised through: (a) minimising the extent of impervious surfaces, (b) use of porous paving in low traffic areas, (c) draining hard surfaces towards permeable surfaces, and (d) inclusion of turf and garden beds.

Solar Panels

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
P12 Solar hot water systems are located for optimum performance.	A12.1 Solar hot water systems are located on the roof of a building and the panels face solar north.

Private Swimming Pools

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
P13 A swimming pool for recreational use by residents of a residential building is designed and constructed to minimise its resource needs by consideration of: • potential usage in terms of number of swimmers; • purpose (e.g, lap swimming, plunging, etc); • siting issues; and • filtration systems.	A13.1 No Acceptable Solution.