

# Sustainable Design Checklist

Reviewed July 2018

All new major developments or refurbishments are required to comply with the checklist to maximise sustainable design opportunities.

**Instructions: Please provide comment how the requirements will each be addressed by completing the comment section and returning the completed form to Taronga's Manager, Sustainability**

Please note, some requirements may not be applicable to all developments, in this instance state N/A in the comment section

Is the development at Taronga Zoo/Taronga Western Plains Zoo: \_\_\_\_\_

Insert name of the development: \_\_\_\_\_

Insert the date this list was completed: \_\_\_\_\_

Water Efficiency		Comment
		Please indicate how requirement will be met
1.	Minimum 4 star water (WELS) rated fitting and appliances are incorporated into the design of the project	<b>Mandatory</b>
2.	Minimum 4 star rated (WELS) outdoor products purchased to meet operational requirements	<b>Mandatory</b>
3.	Weather sensing equipment installed for irrigation	<b>Mandatory</b>
4.	Water meters to be installed	<b>Mandatory</b>
5.	Landscaping that has minimal water use requirements or requires little to no ongoing watering must be considered (e.g. native plant species)	<b>Mandatory</b>
6.	Important habitats or areas supporting key species of flora and fauna have been identified.	<b>Mandatory</b>
7.	Harvest water from on-site sources such as rain water, ground water, storm water or treated waste water (Taronga Zoo Waste Water Treatment Plant)	<b>Mandatory</b>
8.	Locally harvested rain water used to service site needs such as landscape irrigation and toilet flushing	<b>Commended</b>
9.	Storm water drainage systems are landscaped appropriately to encourage storm water disposal and re-use through plant use, evaporation, soaking and improved site visual amenity	<b>Commended</b>

10.	Porous surface treatments are to be applied where appropriate to reduce stormwater runoff	<b>Commended</b>	
11.	New buildings/fit outs include a dual water pipe system for recycled and/or rain water for building use	<b>Commended</b>	
12.	Implement public water bottle refill stations	<b>Commended</b>	

## Energy Efficiency

### Comment

Please indicate how requirement will be met

1.	Incorporate energy efficient lighting systems (e.g.: energy efficient bulbs, LED lighting, sensors, timers).	<b>Mandatory</b>	
2.	Electricity and gas sub metering is installed	<b>Mandatory</b>	
3.	Appliances must be a minimum of 4 star rating.	<b>Mandatory</b>	
4.	Give preference to overhead fans rather than AC as a priority	<b>Mandatory</b>	
5.	Air conditioning systems provide for either 'mixed modal', 'economy' or 'night flushing' operation have been assessed. Standalone AC has been avoided	<b>Mandatory</b>	
6.	Solar, with gas or electric boosted hot water system installed	<b>Mandatory</b>	
7.	Translucent roof sheeting materials/skylights have been incorporated	<b>Mandatory</b>	
8.	Assess potential for a building or development to incorporate renewable energy (solar) sources	<b>Mandatory</b>	
9.	Incorporate renewable energy power sources into the design (e.g. solar PV, solar hot water, heat pumps)	<b>Commended</b>	
10.	A programmable lighting control system (intelligent lighting) has been considered and included where appropriate	<b>Commended</b>	

## Passive Design

### Comment

Please indicate how requirement will be met

1.	Building is to be orientated north-south	<b>Mandatory</b>	
2.	Internal building design to take into account the use of each section of the building to maximize exposure to winter sun and minimise exposure to summer sun.	<b>Mandatory</b>	

3.	Shade installed where appropriate fixed or moveable external louvers, overhanging eaves or awnings.	<b>Mandatory</b>	
4.	Buildings are to include roof ventilation where appropriate to encourage air flow cooling	<b>Mandatory</b>	
5.	Windows to the north and south to be designed to allow year round natural light and ventilation.	<b>Mandatory</b>	
6.	Buildings are to include light coloured roofs to reflect solar radiation.	<b>Mandatory</b>	
7.	Remote power source lighting is provided where appropriate	<b>Commended</b>	

## Waste Management (C&D & Operational)

### Comment

Please indicate how requirement will be met

1.	Review development site to identify existing materials for reuse or recycling prior to construction	<b>Mandatory</b>	
2.	Materials contain recycled content, and/or prefabricated where possible	<b>Mandatory</b>	
3.	Waste recycling and disposal facilities for future site operations are indicated on the development plans (eg: paper, green and plastic waste recycling, and organic waste) discuss applicable waste streams with Manager, Sustainability	<b>Mandatory</b>	

## Materials

### Comment

Please indicate how requirement will be met

1.	Rapidly renewable materials (eg. bamboo flooring) or certified sustainably harvested timber where required (e.g. Forest Stewardship Council) should be incorporated into the project where applicable	<b>Mandatory</b>	
2.	Timber used in building construction (structure, formwork, studs, screening, landscaping, flooring etc.) is to be certified as sustainable or plantation	<b>Mandatory</b>	
3.	Sustainable alternatives to timber are utilized such as recycled content plastic products where applicable	<b>Mandatory</b>	
4.	Use durable and low maintenance materials which require very little energy to maintain over their life (such as painting, cleaning etc.) where appropriate.	<b>Mandatory</b>	
5.	Carpets and underlays to contain recycled materials	<b>Mandatory</b>	

6.	Standard size materials used or materials cut to size at supplier's premises to minimise on site cutting and waste	<b>Commended</b>	
7.	Development to use products/services that capitalise on reduced embodied energy (eg. concrete with fly ash content greater than 20% used in non structural components)	<b>Commended</b>	
8.	Materials used are sourced locally where possible to reduce emissions associated with transportation	<b>Commended</b>	
9.	Back fill aggregate with certified clean recycled content is used (e.g. C&D waste aggregate)	<b>Commended</b>	

## Indoor Air Quality

### Comment

Please indicate how requirement will be met

1.	Zero Volatile Organic Compound (VOC) paints are used on internal walls	<b>Mandatory</b>	
2.	Products and adhesives compounds with no or low VOC's are to be used where appropriate	<b>Mandatory</b>	
3.	Water based adhesives, paints, treatments are used where possible	<b>Mandatory</b>	
4.	Minimise the use of PVC plastic where possible	<b>Mandatory</b>	
5.	Provide external exhausts for equipment rooms/areas such as those used for photocopying/printing	<b>Mandatory</b>	

## Other Considerations

### Comment

Please indicate how requirement will be met

1.	Incorporate acoustic or noise control materials	<b>Mandatory</b>	
2.	Refrigeration and cool rooms must be well insulated and enclosed	<b>Mandatory</b>	
3.	Implement electrolysed water (E-water) system to reduce chemical footprint (especially applicable to kitchens and food prep areas)	<b>Commended</b>	
4.	Certified interiors and fitout (e.g. GECA, Eco Specifier or similar)	<b>Commended</b>	
5.	Review feasibility of a BMS minimum requirement is to have metering in place and integrated	<b>Mandatory</b>	

	into side system for electricity, gas and water		
--	--	--	--