



*Live lighter & brighter at*

**B BRABHAM**



Development WA

**PEET**



## *Live lighter* at Brabham

Bringing back the best of the good old days doesn't mean losing the best of today. We've applied modern thinking towards innovative community product incentives and have achieved a 6 star 'Green Star', by the Green Building Council of Australia, which is an internationally-recognised sustainability rating system. This benchmark represents a World Leading Sustainable Development, an outcome the Green Building Council of Australia publicly acknowledges for only 3 other developments in Western Australia, and the first in the City of Swan.

Sustainable landscaping options and energy efficient initiatives for each household are just some of the ways we are working towards reducing our footprint and your household bills. On completion of the Project, Brabham's carbon footprint is anticipated to be up to 40%\* lower than a typical land estate and will be a place that is wise beyond its years.

Live lighter knowing you're contributing to change.

green building council australia

**6** greenstar

Communities v1.1

\*Assumes solar PV is installed on all eligible lots (average of 2-3kW/dwelling).

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# 1. The future is brighter

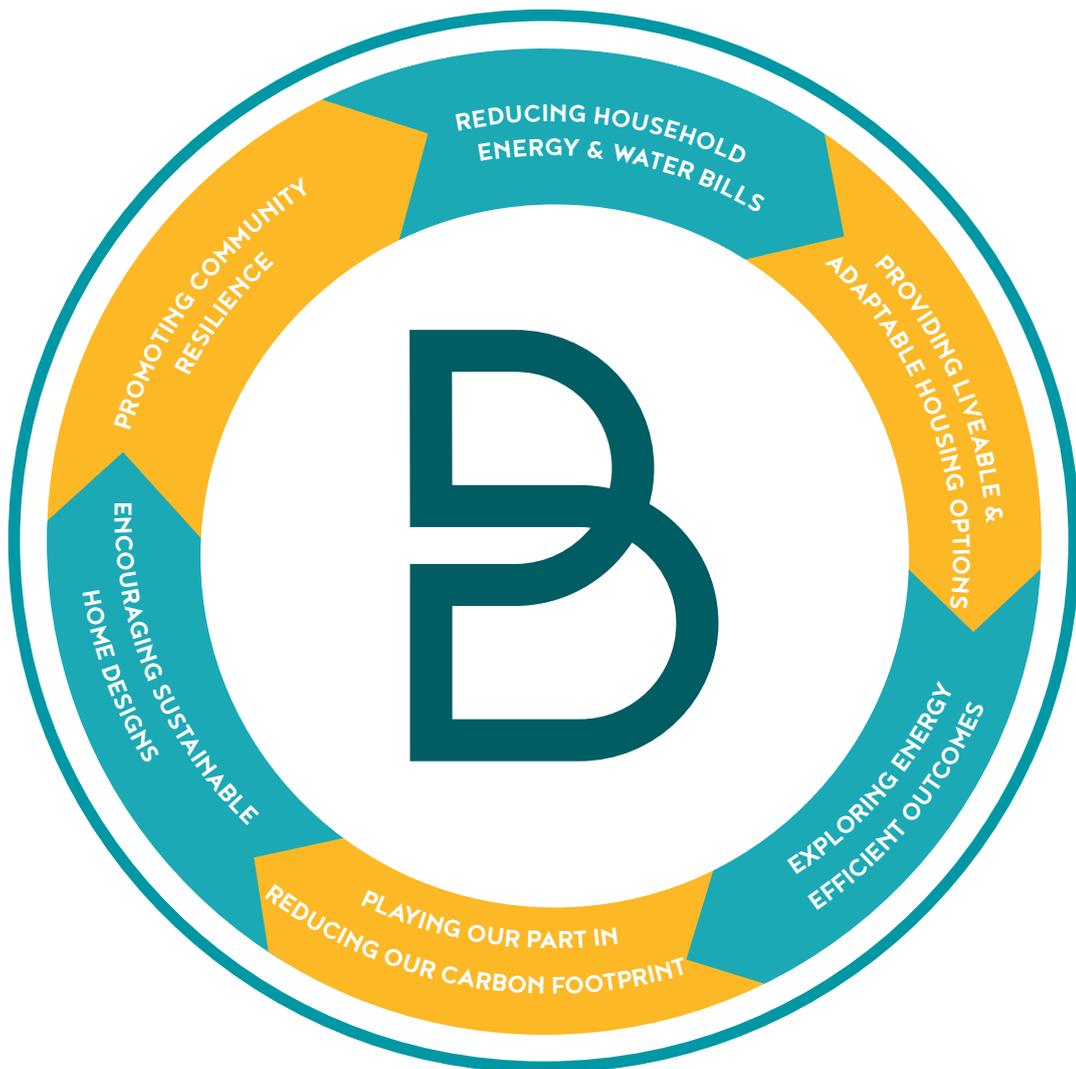
Whether you embrace sustainability to save money, future proof your home or play your part, we all know that the future is brighter.

Australian households are responsible for approximately 20% of Australia's Greenhouse Gas Emissions, with the average home producing approximately seven tonnes of greenhouse gas emissions each year<sup>1</sup>. With a changing climate and rising population, it is therefore crucial that

households move towards positive development to reduce environmental impacts both now and for future generations.

By future proofing your home, you're not only doing your part in creating a greener planet but you'll also be saving money on your household bills.

At Brabham, we aim to foster *sustainability* and *change* through:



## 2. What we're doing at Brabham

Brabham is creating a sustainable and connected community which will be home to approximately 3,300 new dwellings as well as schools and recreational areas. Residents will be welcomed to a vibrant and thriving estate that seeks to retain the cultural and natural heritage of the 220ha site.

The project will be striving to achieve the following initiatives in order to foster sustainability and change for future generations.



**Creating a green environment** by investing in alternative water solutions that enables us to grow a more sustainable environment



**Facilitating neighbourhood connections** through investment in community events as well as supporting local groups and clubs



**Reducing waste** by reusing and recycling materials as part of our processes in addition to increasing access to recycling in public places



**Planting up to double the number of trees** required by the City of Swan to streetscapes within the estate



**Retention of existing bushland** that borders the site as well as the beautification of St Leonards Creek



**Investigating a community battery network** and exploring eco-friendly technology that will help to reduce residents' reliance on the grid and reduce their emissions



**Designing for healthy and active lifestyles** through thoughtful streetscapes and infrastructure linking residents to parks throughout the estate and to each other

# 3. Brabham Better Life Bonus

Brabham makes sustainable living affordable and easy with solar, energy and garden initiatives. Each dwelling will be provided with the Brabham Better Life Bonus package.

Our Better Life Bonus package is intended to help you save money by reducing your household energy bills by up to 50%\*, and to help you reduce your carbon footprint. We're also offering an upgrade to the existing front landscaping package, which will assist you in improving water efficiency and achieving a 30% reduction in garden water usage<sup>2</sup>.

As part of the Better Life Bonus Package, you'll receive:



Up to \$3,000 toward a solar system (minimum 1.5kW) - dependent on lot size.



Supply and installation of a home energy management system, to help you track your energy usage.



\$1,000 upgrade to a heat pump hot water system which is more energy efficient than the standard hot water system.



Design Assessment Coordinator service during the building process (up to 2 hours) to help make your home more sustainable.



Every home in Brabham will be offered a free adult bike or two kids bikes when they move in to help reduce greenhouse gas emissions and improve your health.



Upgrade to a wifi enabled smart irrigation controller which automatically adjusts your water usage based on data from local weather stations, for improved water savings.



Installation of a wifi enabled water meter to help you understand your water usage in the garden and to detect leaks before they become an issue.



Soil moisture retention upgrade as part of your front landscaping package to help you achieve a healthier, water efficient garden.

\*Terms and conditions apply.

## How will it benefit you?

The Better Life Bonus will help you:

- Improve efficiency to save money on your energy and water bills
- Improve plant growth and add natural shading to your garden
- Live a healthier and happier lifestyle



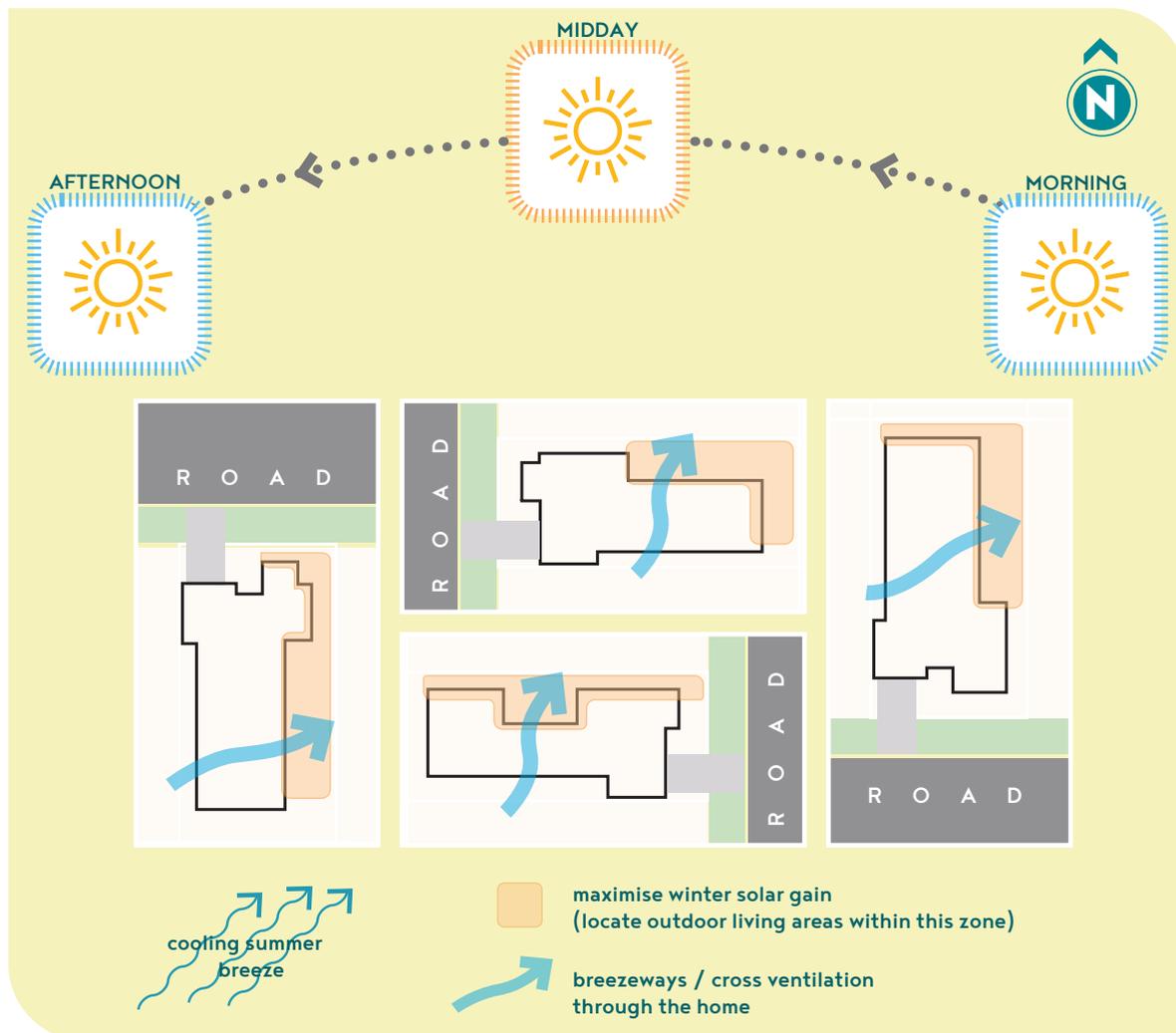
*4. What you can do inside your home  
at Brabham*

## 4.1 Your Home Design

These six tips on home design will help you fill your home with natural light, stay cool in summer and warm in winter. Heating and cooling accounts for roughly 40% of energy use in the average Australian home<sup>3</sup>. By taking advantage of the climate through design, you can maximise energy savings and enjoy the natural light.

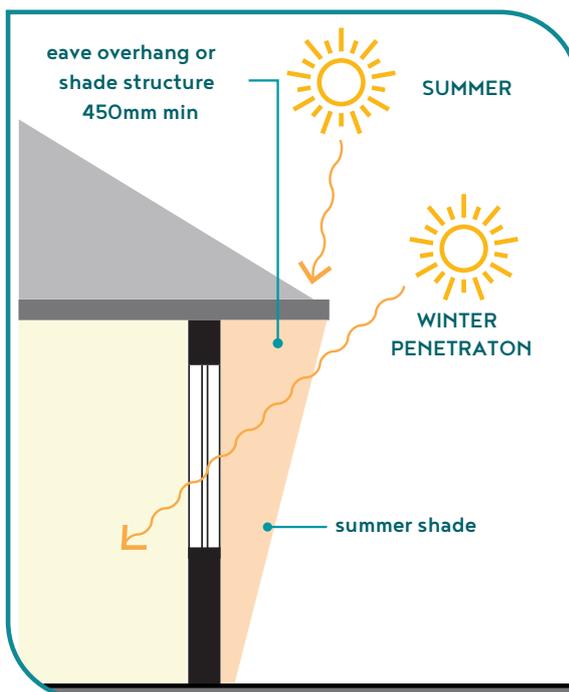


The correct orientation of your home and width of eaves will help you build a more sustainable home.



### DESIGN CONSIDERATIONS

- Orient your home so that internal living spaces have north facing windows.
- Locate courtyards on the north side to maximize access to winter sunlight.
- Integrate cross ventilation opportunities into the design of your home.
- Bedrooms are ideally oriented towards the south to protect them from morning and afternoon sunlight, and maximize potential for cross ventilation.
- Windows facing west and east should be shaded in summer. Consider awnings or planting.
- Windows facing north should have eaves capable of providing protection during summer, and solar penetration during winter.



## Things to ask your builder

1. Is my living room facing north to maximise natural light?
2. Can I include additional insulation that exceeds the Building Code of Australia's (BCA) requirements?
3. Are my eaves sized to help shade the summer sun? As a rule of thumb, we recommend the eaves width to be 45% of the height from the window sill to the bottom of the eaves. For example, 450mm where height is 900-1200mm<sup>4</sup>.
4. Have my windows been placed to maximise natural light? We recommend larger windows on the north side of the home with a low U-Value and SHGC. Smaller windows should be on the east and west side of the home. See the next page over for more information.
5. Is polished concrete, timber or tile flooring in my living room an option, to keep cool on hot summer days?
6. What thermal comfort rating will my home have? In Australia a 6-Star NatHERs thermal comfort rating is mandatory for all new homes. We recommend targeting 7 Star which will help maximise natural light and reduce energy bills.

*Let us help you get a great outcome.*

EVERY PURCHASER AT BRABHAM RECEIVES 2 HOURS FROM A PROFESSIONAL DESIGN COACH TO HELP YOU BUILD YOUR DREAM HOME.



## Did you know?

The Building Code of Australia requires minimum insulation levels (measured as an R-value) based on the type of climate. For Perth, the minimum R-value for the roof or ceiling is 4.1 and walls are 2.8. The minimum R-value for ceiling insulation increases for darker roofs.

Sealing your home accounts for 15-25% winter heat loss. Ensuring your home is adequately sealed is a simple yet effective upgrade to your home.

Windows also refer to the solar heat gain co-efficient or SHGC. This is how readily heat from direct sunlight flows through a window system. A lower SHGC is best.

The Window Energy Rating Scheme (WERS) can be used to view the rating of glazing and energy-related performance of window products.

Sliding windows (and doors) as well as Frameless double sash and louvered windows are a great option to create better airflow.

If choosing window frames, wooden frames rather than aluminum provide a better form on insulation<sup>5</sup>.

Curtains and heavy drapes can be a cost-effective way of helping block out summer sun but letting in the warm winter sun.

When choosing your windows a U-Value = how readily window system conducts heat. A low U-value means your home will stay cooler.

Double glazing improves the insulation of your windows and is a great option if you have larger windows on the western side of your home. The average cost of double glazing is between \$400-\$500 per square metre<sup>6</sup>.

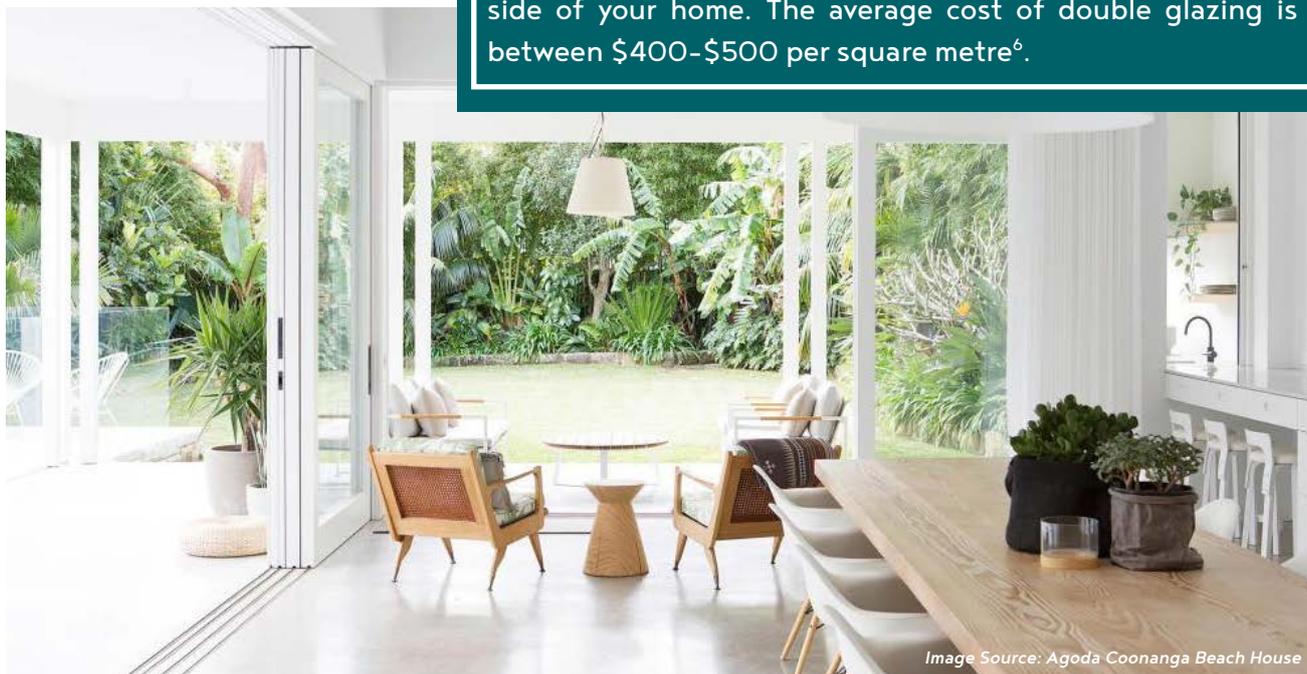


Image Source: Agoda Coonanga Beach House

<sup>5</sup>Your Home, 2013  
<sup>6</sup>Doubleglazed.com

## 4.2 Your Energy

### Making the most of the sun's power

Solar power provides a smart alternative and is a smarter way to save on electricity costs. As part of the complimentary, 'Better Life Bonus' package, every home will receive a rebate towards a solar system.

Depending on the size of your system, you could save between \$540 and \$870 per annum on your electricity bill<sup>7</sup>.

### Having an efficient hot water system

Water heating accounts for approximately 21% of household energy use<sup>8</sup> which is equivalent to approximately \$350 per annum for a four-person household. Choosing an efficient hot water system will help reduce your energy bill. We recommend either a heat pump hot water system or gas boosted solar hot water system.

Every home at Brabham receives a rebate to help upgrade to a more efficient system. Depending on the size of your household (and how much hot water you use), you could save between \$250 and \$335 per annum on your electricity bill.

### Knowing your usage

Tracking your energy usage can be made easier with a home energy display that includes real-time metering. Programmable control of power management and devices in your home can help reduce your consumption and save you money.

The supply and install of a home energy display will be available to every new home as part of the Future Brabham incentive package.

### Choosing efficient lighting

Lighting accounts for approximately 6% of household energy use<sup>8</sup> which is equivalent to approximately \$100 per annum for a four-person household. Switching to more energy efficient lighting (such as LED) can reduce energy consumption by 2-3%.

Designing your house to maximise natural daylight can also play a role in energy efficiency.

### Future proof your garage

In the future more people will be driving electric vehicles. You can future proof your garage by including a 3 phase power point for electric vehicle charging. This is a simple adjustment during the build of your home, but can be an expensive retrofit.



## 4.3 Your Kitchen

Your kitchen is home to most household appliances and can use a lot of energy. Combined, fridges, freezers and cooking appliances account for 13% of energy use<sup>9</sup>.

It is therefore important to select energy-efficient products to reduce electricity costs.

### What uses the most electricity in your home?



The Energy Efficiency Rating (EER) and Water Efficiency Labelling and Standards (WELS) provide a framework to determine the energy and water performance of an appliance. The following recommendations will ensure a more efficient system than the average available on the market.

APPLIANCE	RECOMMENDATIONS
<b>Dishwasher</b>	<ul style="list-style-type: none"> <li>· Aim for WELS 3.5 stars or higher and EER 3.5 stars or higher.</li> <li>· A delayed start function is beneficial to take advantage of cheaper energy tariffs and/or solar production.</li> </ul>
<b>Hot Plate</b>	<ul style="list-style-type: none"> <li>· From an energy efficiency point of view, induction provides the most efficient distribution of heat and can be powered by your solar system.</li> <li>· If you opt for an electric hot water system, then choosing induction will also remove the cost and requirement for a gas connection.</li> </ul>
<b>Fridge and Freezer</b>	<ul style="list-style-type: none"> <li>· Aim for EER 3.5 stars or higher.</li> <li>· Allow an extra 5cm of space where the fridge will go and 10cm at the top and back for ventilation.</li> <li>· If possible, position the fridge away from direct sunlight, heaters, dishwashers and ovens.</li> <li>· Set the fridge between 3°C and 4°C and the freezer between -15 and -18°C (each degree lower uses 5% more energy)<sup>9</sup>.</li> </ul>
<b>Tap Fittings</b>	<ul style="list-style-type: none"> <li>· Aim for WELS 4 Star or higher.</li> </ul>

<sup>9</sup>Commonwealth of Australia, (2019a)

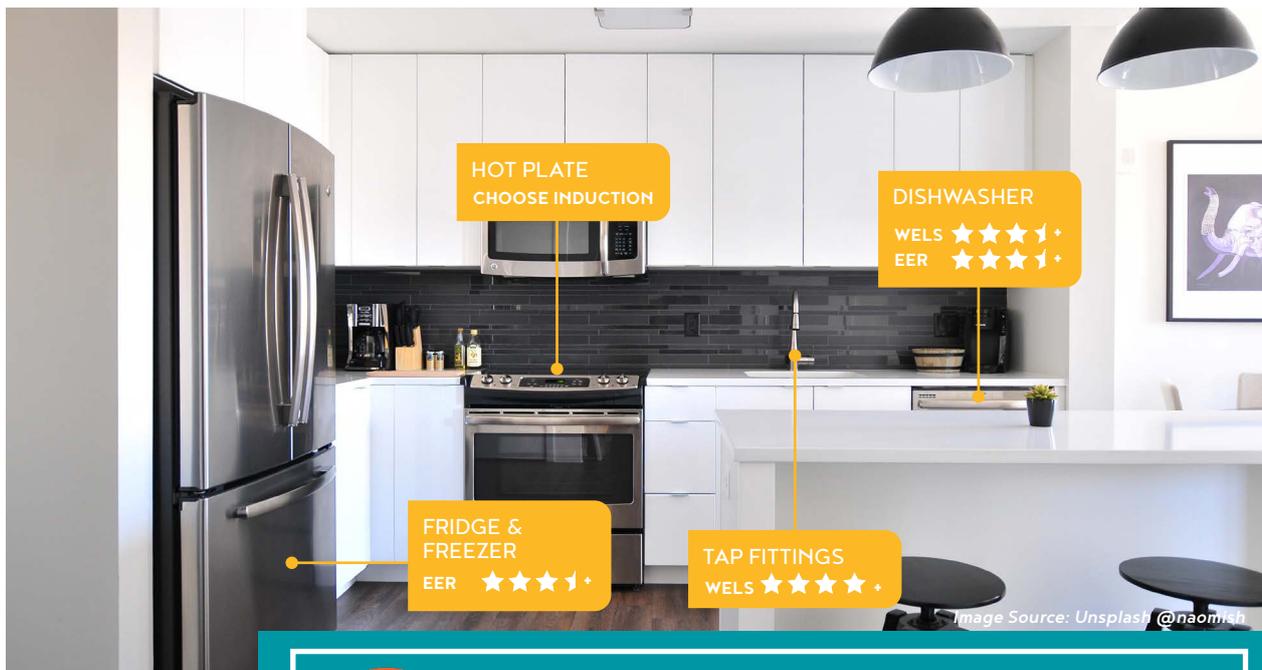


Image Source: Unsplash @naomish



When buying appliances look for the energy rating sticker. Aim for a high number of stars and a low energy consumption. Every extra star saves 23% on running costs. Compare different models at [www.energyrating.gov.au](http://www.energyrating.gov.au)

## Combatting waste in your kitchen

Australians generate approximately 67 million tonnes per year with this figure increasing. We also waste more than 30% of the food we purchase in Australia. That is equivalent to costing the average Australian householding between \$2200 - \$3800 a year<sup>10</sup>. The following diagram provides actions on how you can reduce your waste contribution at home to lower your environmental harm and save money.

- Compost food and garden waste
- Reduce single-use plastics including plastic bags
- If you don't need advertised mail, label your letterbox
- Buy from bulk food stores to reduce packaging

- Recycle soft plastics and e-waste appropriately
- Dispose of aluminium products during kerbside collection



*Tip.* Remember to include a space for bins somewhere in your kitchen like under the sink.

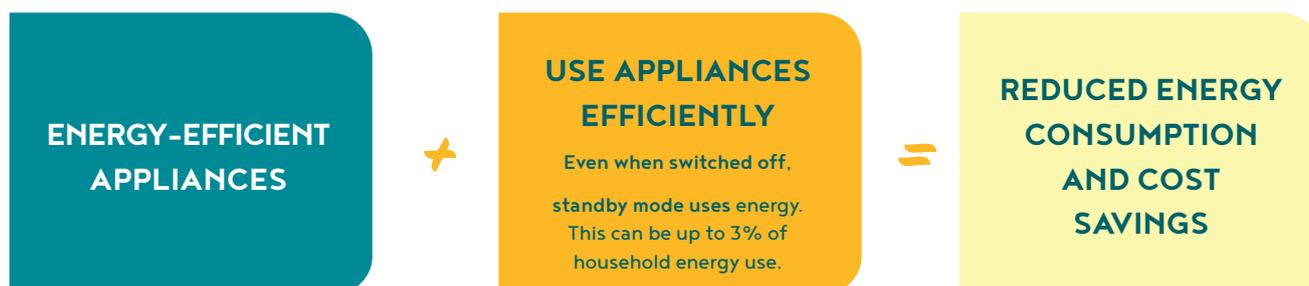
- Donate and sell unwanted clothes and household items
- Buy secondhand and recycled content products/clothes
- Reuse containers and jars
- Donate paper/egg cartons to primary schools

An average Australian family of four could be expected to produce around 150,000L of grey water (household waste that hasn't been in contact with toilet wastewater) per year<sup>11</sup>. This can be safely applied to gardens through appropriate systems excluding kitchen and dishwasher wastewater. Find current approved WA grey water systems on the Department of Health website.

## 4.4 Your Living Area

### Appliances and fixtures

Household equipment and appliances are responsible for roughly 33% of energy consumption and 45% of greenhouse gas emissions<sup>12</sup>. It is therefore important to choose and use energy efficient appliances correctly.



The following table provides advice on common living room appliances and fixtures.

APPLIANCE	RECOMMENDATIONS
<b>Ducted Air Conditioner</b>	<ul style="list-style-type: none"> <li>· Aim for an EER and COP<sup>13</sup> of 3 or higher based on the climate zone of Perth</li> <li>· Ensure the system is sized correctly based on the size of your room</li> <li>· Ask for the ability to zone your air conditioner so that only certain areas are being conditioned (for instance only living areas during the day)</li> </ul>
<b>TV</b>	<ul style="list-style-type: none"> <li>· When selecting your television, keep in mind the size (the bigger it is, the more energy it will consume), screen type (OLED, LED or LCD TVs use less energy than plasma, brand (some are more efficient than others)<sup>14</sup></li> </ul>
<b>Lights</b> Lighting in homes consumes 8%-15% of the average electricity budget* <sup>15</sup>	<ul style="list-style-type: none"> <li>· Aim for LED lighting throughout the home</li> <li>· Choose lamps best suited to desired lighting effects e.g. dimmability and switch-on time<sup>12</sup></li> <li>· Maximise the use of daylight in your home through design</li> <li>· Consider implementing skylights</li> </ul>

\*This can differ with user behaviour, lighting technology and design.

<sup>12</sup>Commonwealth of Australia, 2013d  
<sup>13</sup> Coefficient of performance - a similar rating scale to EER used for the cooling function of air conditioners  
<sup>14</sup>Red Energy Pty Ltd, 2018

## Bringing the outside inside

Not only are indoor plants aesthetically pleasing for design, they contribute to an overall positive and healthy home environment.

Indoor plants absorb heat to keep your home naturally cool.

These include:

- Snake Plants
- Aloe Vera
- Areca Palms
- Ficus Tree
- Ferns

Plants remove toxins from air - up to 87% of volatile organic compounds (VOCs) every 24 hours<sup>15</sup>

### BENEFITS OF INDOOR PLANTS

Release moisture into the air which decreases incidences of dry skins, colds, sore throats and dry coughs<sup>15</sup>

Improve productivity by decreasing heat and noise and increasing attentiveness.<sup>16</sup>



Image Source: ProFlowers

## 4.5 Your Bedroom

### Keeping cool in your room

Ceiling fans are a cheaper and more energy efficient way to keep cool running at around 2 cents per hour<sup>17</sup>. However, some ceiling fans provide more energy savings than others. Fans with DC motors offer a low watt motor which uses less power without reducing performance. Consider using an LED fan light to save even more on savings<sup>18</sup>.

As mentioned apart of the orientation and design of your home, avoid west-facing bedrooms to ensure sleeping comfort<sup>17</sup>. If possible, locate living and bedrooms at the southern end of your home if north-facing.



Image Source: Beacon Lighting

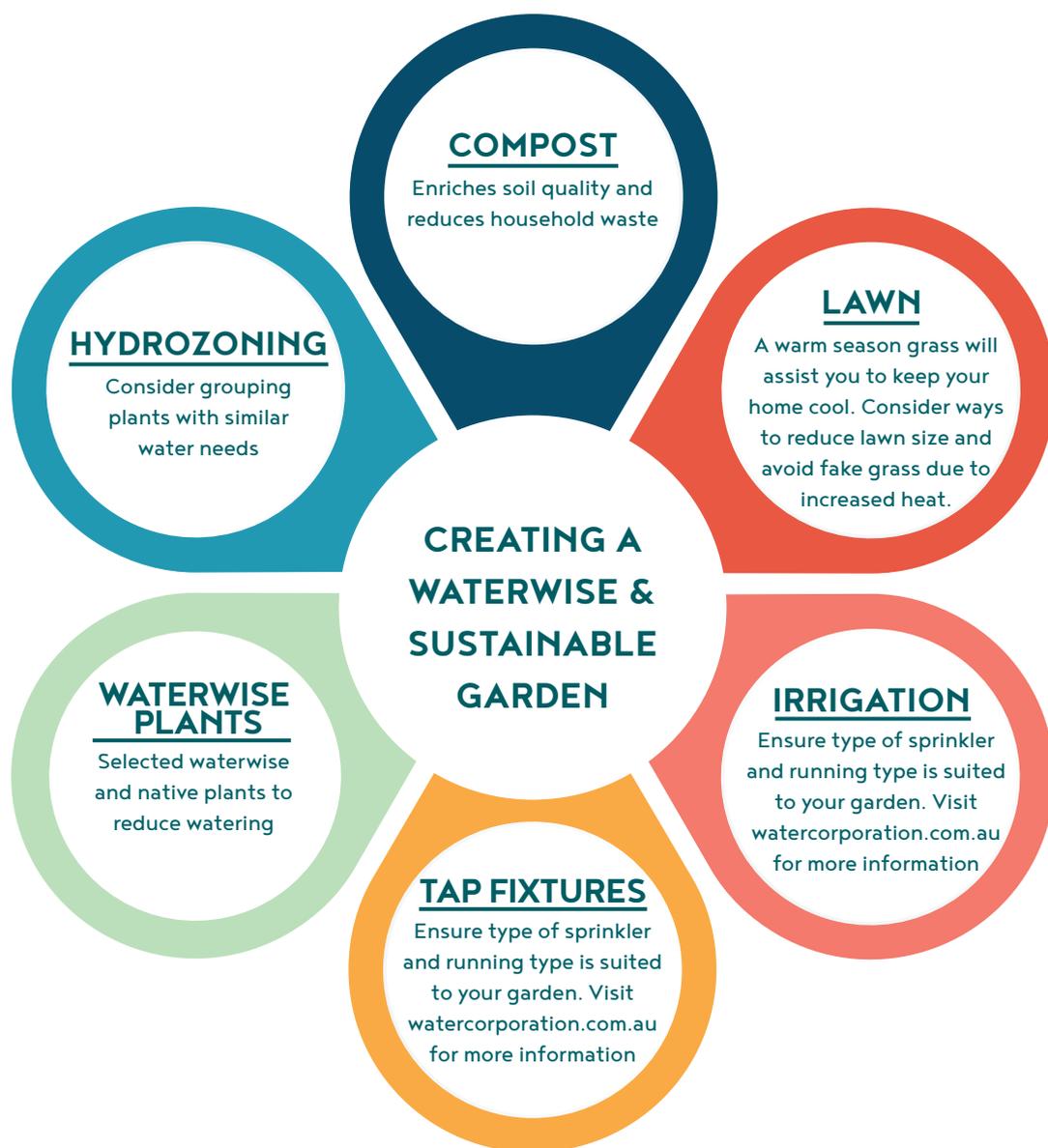
PRODUCT	RECOMMENDATIONS
<b>Dryer</b>	<ul style="list-style-type: none"> <li>· Consider if you need a dryer or if you can dry your clothes outside</li> <li>· Aim for EER of 2 stars or higher</li> </ul>
<b>Washing Machine</b>	<ul style="list-style-type: none"> <li>· Choose a model that is the right size for your needs</li> <li>· Front loaders are normally more energy and water efficient</li> <li>· Look for models with dual water connections (hot and cold) to avoid only using an internal heater to heat water if cold is only available</li> <li>· Ask your provider if the machine heats water internally for a cold wash program (some machines may heat water during cold wash to dissolve detergent in colder climates e.g. Europe)</li> <li>· Look for models with eco cycle- save both energy and water</li> <li>· Higher speed models extract more moisture to avoid using a dryer</li> </ul>
<b>Toilet</b>	<ul style="list-style-type: none"> <li>· Aim for WELS of 4 Star or higher</li> </ul>
<b>Shower Rose</b>	<ul style="list-style-type: none"> <li>· Aim for WELS 3 Star or higher</li> </ul>
<b>Tap Fittings</b> (Kitchen, Laundry and Bathrooms)	<ul style="list-style-type: none"> <li>· Aim for WELS 4 Star or higher</li> </ul>

<sup>17</sup>Commonwealth of Australia, 2019a, 2019d

<sup>18</sup>Fansonline, 2020

## 4.6 Your Garden

According to the water corporation<sup>19</sup>, Australians use nearly half of household water in gardens. See the diagram below for ideas on how to create a waterwise and sustainable garden.



<sup>19</sup>Water Corporation, (n.d)

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# BRABHAM



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