

Januburu  
SIX SEASONS

# Design *Guidelines*



Januburu

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**JANUBURU SIX SEASONS**  
**Broome, Western Australia**

# **Design** *Guidelines*



## Introduction

As the Western Australian Government’s specialist land and property developer, LandCorp has taken a leading role in championing the principles of sustainable development at the Januburu Six Seasons estate.

The development incorporates water sensitive urban design features to reduce the risk of contaminants entering the surrounding native bush land and waterways. The subdivision has been designed to capitalise on natural cross-flow ventilation and passive solar orientation principles to help reduce future energy use.

These design guidelines apply to current and future stages of the Januburu Six Seasons development to maintain a quality standard of housing, and to assist you to achieve a sustainable house design compatible with the unique Broome lifestyle. In the long term, a sustainable home will have less impact on the environment, provide a better living environment and save you money.



*Indicative only - Concept plan of Januburu Six Seasons.*



## Design Guidelines

The objectives of the Design Guidelines are to:

- Achieve greater sustainability leading to energy, water and resources conservation.
- Promote safety, variety and a sense of place.
- Create a quality, visually attractive place to live.
- Achieve a development that is sympathetic to the environment of Broome.

At the end of this information package is a checklist to review with your chosen architect or builder. Most of the design guideline criteria are mandatory. However, we have also provided best practice recommendations for improving the sustainable design of your home. You may be entitled to a rebate from LandCorp if you include some of these best practice ideas in your home<sup>R</sup>.

## Local Government Planning and Approvals

The Shire of Broome supports the endeavours of LandCorp to encourage climate sensitive design, sustainable development and quality housing through its Design Guidelines. LandCorp requires that you obtain approval of house plans and specifications from LandCorp's nominated assessor before lodging a building application with the Shire of Broome.

## Statutory Requirements

The guidelines are in addition to all other statutory requirements relating to building development, design and construction. If there are instances where these design guidelines conflict with the statutory requirements of other legislation or government authorities such as the Shire of Broome or the Building Code of Australia Residential Design Codes, the statutory requirements are to take precedence.

R Rebate Options.



## Passive Thermal Design

A strategy for passive thermal design must be adopted including consideration of the design and construction issues outlined below.

### Appropriate Living

These criteria contribute to the success of the passive thermal performance of the residence and your enjoyment of the unique Broome lifestyle and climate.

#### Mandatory Criteria:

- All dwellings shall have a shaded habitable out door space adjacent to main living area, with a minimum width of 2.6m and minimum area of 20m<sup>2</sup>, and able to take advantage of cooling breeze patterns (predominantly westerly)

#### Best Practice:

- Make provision for outdoor cooking
- Protect outside living areas/entry doors from easterly winds

### Orientation

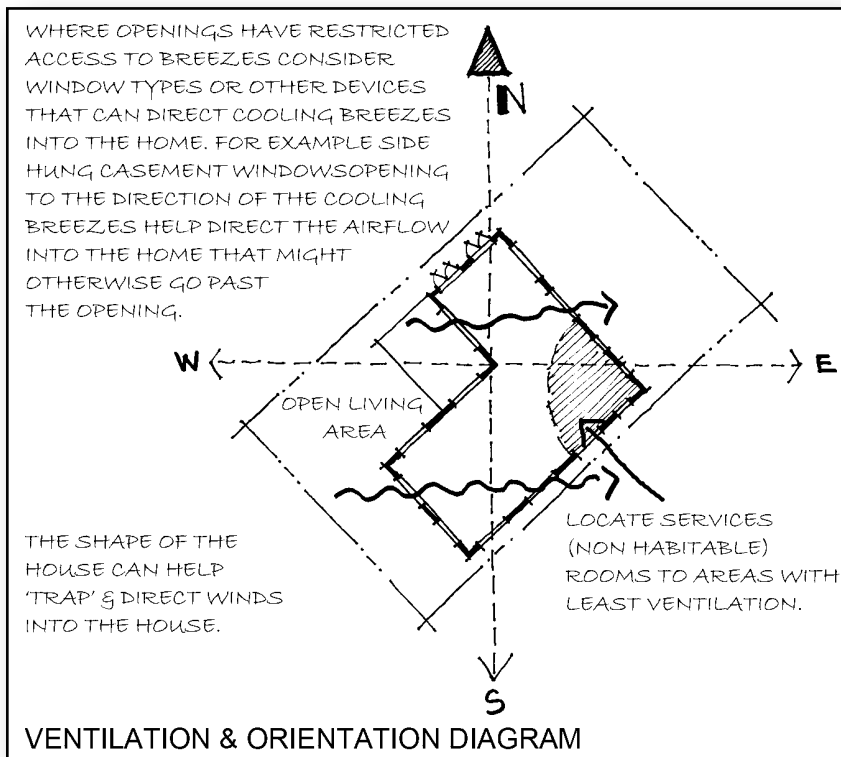
These criteria assist you to orientate your building to take advantage of cooling breezes, improve the thermal performance of the residence and take into consideration issues including air conditioning plant noise.

#### Mandatory Criteria:

- Openings to be designed to provide good passive cooling from the cooling breezes (predominantly westerly). Good cross ventilation requires large openings for both the entry and exit of breezes

#### Best Practice:

- Minimise wall surface area and glazing, whilst maximising shading to all walls with east and west exposure
- Consider distance between adjoining residences to allow for adequate breeze access
- Consider location of outbuildings and dense planting in consideration of breeze access to residence and adjoining properties
- Location of external shaded living area to west and south elevation of residence to suit breeze access
- Consider zoning of main living areas within the residence in respect to breezes
- Provide minimum of 3.0m between any external air conditioning units and adjoining dwelling
- Provide appropriate ventilated screening to all external air-conditioning units



## Ventilation

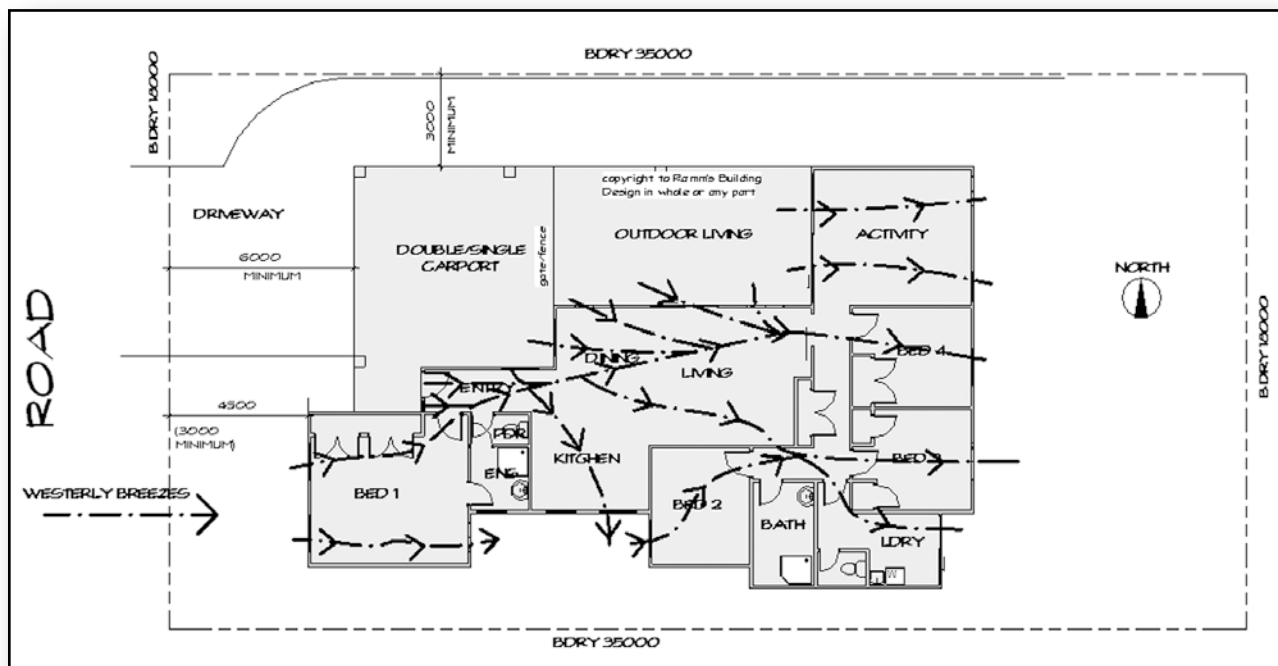
Ventilation is critical to allow breeze access through the residence to both living and sleeping areas, improving thermal performance and reducing reliance on artificial cooling. 'Orientation' and 'Ventilation' design elements must work together to provide natural cooling. To improve the natural flow of cooling air through the home it is recommended that larger openings are on the downwind side of the home.

### Mandatory Criteria:

- Provide minimum 1 x ceiling fans to all habitable rooms including covered outdoor living areas.
- Ceiling fans to have settings with summer/ winter function
- Provide adequate breeze paths to all habitable rooms; provide two external openings where possible – provide breeze path diagram
- For open plan living areas ensure adequate cross ventilation to each functional area – provide breeze path diagram
- Provide roof ventilation eg., 'E' vent, gable vents or similar to be consistent with manufacturers specifications

### Best Practice:

- Consider narrower plan forms to assist breeze access and cross ventilation
- Consider internal windows or positioning of doors to facilitate breeze path
- Consider window types/ location for more effective opening such as louvre windows: i.e. reduce glazing area while retaining/ increasing ventilation opening<sup>R</sup>
- Larger openings on the downwind side of the home achieves better natural air flow



### Shading

Maximising shading of the residence, particularly glazing, will increase the thermal comfort of the building occupants, improve the thermal performance of the residence and reduce reliance on artificial cooling.

#### Mandatory Criteria:

- North, west and east facing walls must have minimum 900mm eaves to all rooms
- South facing walls must have minimum 900mm eaves to habitable rooms, except for minor bulkhead projections to non-habitable rooms (e.g. bathrooms, wc and laundry).

#### Best Practice:

- Additional shading – particularly to west facing walls and glazing, is recommended to reduce the afternoon summer heat load.
- Provide a minimum of 1200mm shading to all windows / doors
- Use of landscape to shade the residence – refer Landscape Management for appropriate shade tree varieties
- Ensure any external paving or concrete slabs abutting external walls of residence is shaded by eaves

### Building Form

These criteria will assist in improving the thermal comfort of occupants in both internal and external living areas and allow for the safe installation of elements such as ceiling fans. In addition, they will maintain a quality standard of housing within the development.



### **Mandatory Criteria:**

- All dwellings to have minimum 2700mm above floor level ceiling height to all habitable areas
- All dwellings to have average 2600mm above floor level to underside of external living areas
- Provide minimum 26 degree pitch to all gable or hip type roof forms
- Transportable or kit homes will only be permitted at LandCorp's discretion provided they comply with all other criteria
- Home entrances should be clearly defined
- Houses situated on corner lots must address both street frontages

### **Building Materials**

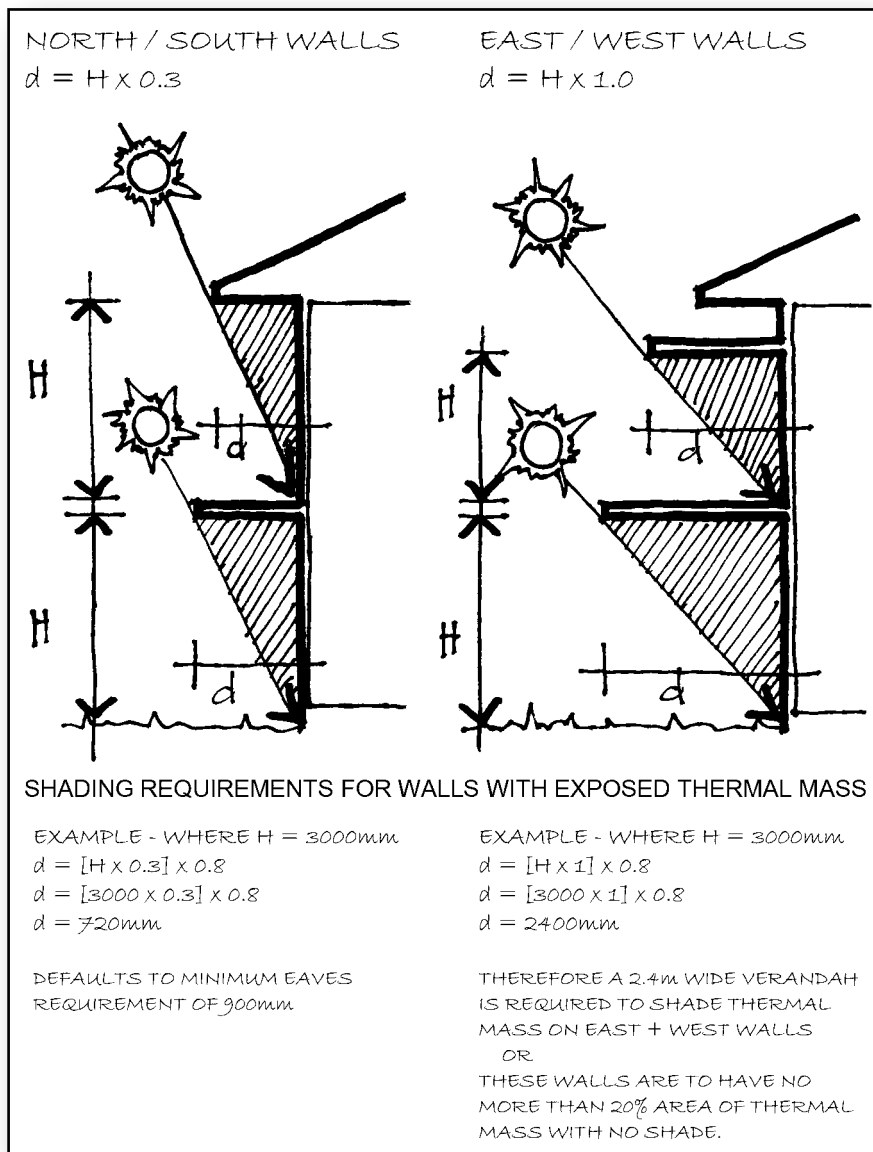
A thoughtful approach to material selection and construction can reduce heat gain and retention within the building thereby increasing occupant comfort and improving the overall thermal performance of the home. Refer to page 7 for shading calculation.

### **Mandatory Criteria:**

- Where thermal mass such as concrete block and clay brick to external walls is used it must be demonstrated that 80% shading is achieved at the summer solstice to walls with northern and southern exposure. A sun shadow diagram shall be included.

### **Best Practice:**

- Use light coloured roofing materials
- Provide tinted glazing to external doors and windows
- Any structural timbers should be Certified Plantation Timbers only
- Use low emission surface coatings predominantly throughout
- Maximise use of prefabricated components
- Maximise use of non hazardous materials
- Use of recycled construction materials where appropriate



### Insulation

Insulation will reduce heat gain in the residence, improve the comfort of occupants and the overall thermal performance of the residence, and help save energy.

#### Mandatory Criteria:

- Use a combination of roof and ceiling insulation to provide minimum thermal resistance of R2.5 for heat flow in downward direction
- Provide reflective foil to all external walls

#### Best practice:

- For greater thermal performance of the home, provide a minimum R1.5 bulk insulation to external and all internal walls.



## Energy Management

Identifies approaches to assist in the reduction the overall energy consumption of the residence and assist in reducing energy costs for the occupant.

### Mandatory Criteria:

- Provide low energy water heating system (eg. Solar water system with electric booster, heat exchange system)<sup>R</sup>
- If installing an air-conditioning system, use inverter split system.<sup>R</sup>

### Best practice:

- Where installed electrical appliances to be minimum 4 star rating
- External lighting to be controlled by timer controls/ photosensitive cells/ motion sensors as appropriate to control operation
- Lighting fixtures/ lamps (internal and external) to be high energy efficiency e.g. triphosphor, compact fluorescent or similar
- Internal lighting to be controlled by lighting management system e.g. photosensitive cells, ultrasonic ambient/ motion sensors or similar.
- Minimise adverse impact of glare or light onto adjoining properties or motorists.
- Installation of photovoltaic systems or renewable energy systems encouraged.
- Solar water system collectors should be concealed from the street or other public areas, colour coded to the colour of the roof, installed on the place of the roof at the rear and ideally the storage tanks located within roof space. Stands on roof tops are discouraged
- The ability to close off air conditioned rooms from non air conditioned areas will enable more efficient cooling and energy savings.

## Water Conservation

These elements that will reduce water use inside and outside the home.

### Mandatory Criteria:

- AAA rated water efficient tapware and dual flush toilets
- AAA rated aerated shower rose
- AAA rated tapware and flow regulators

### Best practice:

- Installation of rain sensors to irrigation system
- Installation of water efficient appliances
- Installation of WA Health Department approved greywater treatment/ reuse: preferably gravity feed systems not reliant on storage tanks/ pumps<sup>R</sup>



## Landscape and Fencing

Effective landscape design can improve access to cooling breezes to the residence, reduce maintenance, support biodiversity and water consumption.

### Best practice:

- Provide controlled irrigation such as programmable controllers or tap timers
- Plant species such as local native, drought resistant and food producing, should be selected to be suitable to the Broome climate
- Lawn shall be recommended Waterwise species such as local “Roebuck Couch” and total area not to exceed 20% of the outdoor lot area
- Provide minimal usage irrigation such as trickle irrigation, drippers and sub-surface irrigation including to lawn areas<sup>8</sup>
- Installation of rain sensors to irrigation system
- Provide permeable surfaces to reduce stormwater runoff
- Front fences shall be no higher than one metre and be visually permeable.
- Side fences (within the front setback of the house) should be no higher than 1 metre and be constructed of the same or matching materials as those used in the front fences.
- Fencing to those lots where the side fence abuts a street may have a fence to screen and provide security to rear yards. However, should houses overlook secondary streets (corner lots) it is strongly encouraged that such fencing not enclose the side of the house and be largely open and visually permeable above one metre in height.
- All boundary fences should allow airflow.

## Garage and External Storage Areas

It is important that garages (particularly garage doors), carports, and parking areas be detailed to reduce their visual impact and add interest to the streetscape.

### Mandatory Criteria:

- A carport or garage shall be provided
- Carports, garages and outbuildings, where they exceed 15 square metres in area, shall be constructed of the same materials as the main dwelling
- Bin storage, clothes lines and drying areas should be screened from public areas.

### Best practice:

- Garages and carports shall preferably be located under the main roof of the dwelling.



## Other sources of information

### Your Home Design Guide

The Your Home Design Guide is Australia's guide to environmentally sustainable house design and construction.

The **Your Home Technical Manual** gives you the information you need to design and build a more comfortable home that is less expensive to run while more environmentally friendly. It is the definitive tool for creating a home that is enjoyable to live in, cost effective and environmentally sensitive.

Further information about Your Home Design Guide and the Technical Manual is available at [www.greenhouse.gov.au/yourhome](http://www.greenhouse.gov.au/yourhome)

### Greensmart Principles

The Housing Industry of Australia GreenSmart Design Principles encourage the development of environmentally sustainable housing. The application of GreenSmart principles by landowners when designing and constructing their residence would likely result in waste reduction, promote energy and water efficiency and encourage recycling.

Further information regarding the GreenSmart incentives can be accessed at [www.greensmart.com.au](http://www.greensmart.com.au)

### Energy Smart Homes

The Sustainable Energy Development Office of Western Australia (SEDO) promotes the reduction of energy consumption at home. This includes easy and inexpensive ideas when building a new home and also offers advice on the many energy efficient and renewable energy products available, as well as information on Government rebates.

Further information regarding energy smart practices is available at [www.sedo.wa.gov.au](http://www.sedo.wa.gov.au)

### Waterwise Principles

The Water Corporation promotes the use of Waterwise principles in the design of new homes. Waterwise Principles promote the minimisation of water usage within homes through the encouragement of the use of efficient water using appliances, plumbing fittings, and garden design including planning, irrigation requirements, construction and suitable plant selections.

Information regarding Waterwise principles can be obtained through the Water Corporation's website at [www.watercorporation.com.au](http://www.watercorporation.com.au)

## Design and Building Approvals

As a condition of purchase of your lot, you are required to obtain approval of house plans and specifications from LandCorp's nominated assessor before you lodge a building application with the Shire of Broome.

The assessment will take into account the provisions of these guidelines. Any non-compliant applications will be referred to LandCorp for a determination.



## Mandatory Building Design Criteria

### Passive Thermal Design

<p><b>Appropriate Living:</b></p> <p>1.1 • All dwellings shall have a shaded habitable out door space adjacent to main living area, with a minimum width of 2.6m and minimum area of 20m<sup>2</sup>, and able to take advantage of predominantly westerly cooling breeze</p>
<p><b>Orientation:</b></p> <p>2.1 • Openings to be designed and located to maximise good passive cooling from the prevailing cooling breezes (predominantly westerly).</p>
<p><b>Ventilation</b></p> <p>3.1 • Provide minimum 1 x ceiling fans to all habitable rooms including covered outdoor living areas</p> <p>3.2 • Ceiling fans to have settings with summer/ winter function</p> <p>3.3 • Provide adequate breeze paths to all habitable room; provide two external openings where possible – provide breeze path diagram</p> <p>3.4 • For open plan living areas ensure adequate cross ventilation to each functional area – provide breeze path diagram</p> <p>3.5 • Provide roof ventilation eg. ‘E’ vent, gable vent or similar to be consistent with manufacturers specifications</p>
<p><b>Shading</b></p> <p>4.1 • North, west and east facing wall must have minimum 900mm eaves to all rooms</p> <p>4.2 • South facing wall must have minimum 900mm eaves to all habitable rooms except for minor bulkhead projections to non-habitable rooms (e.g. bathroom, wc and laundry)</p>
<p><b>Building Form</b></p> <p>5.1 • Minimum size of dwelling (excluding carport, garaging and verandahs) shall be:                      - 140 square metres for lots with an area equal to or greater than 700 square metres                      - 100 square metres for lots with an area less than 700 square metres</p> <p>5.2 • Some sites will be specifically nominated as suitable for grouped dwellings, in which case the minimum size of each group dwelling shall be 80 square metres</p> <p>5.3 • All dwellings to have minimum 2700mm above floor level ceiling height to all habitable areas</p> <p>5.4 • All dwellings to have average 2600mm above floor level to underside of external living areas</p> <p>5.5 • Provide minimum 26 degree pitch to all gable or hip type roof forms</p>



## Mandatory Building Design Criteria continued...

- 5.6 • Transportable or kit homes will only be permitted at LandCorp's discretion and provided they comply with all other criteria
- 5.7 • Home entrances should be clearly defined
- 5.8 • Houses situated on corner lots address both street frontages

### Materials

- 6.1 • Where thermal mass such as concrete block and clay brick is used to external walls, it must be demonstrated that 80% shading is achieved through summer. Complete calculations provided on Application Form if relevant.

### Insulation

- 7.1 • Use a combination of roof and ceiling insulation to provide minimum thermal resistance of R2.5 for heat flow in downward direction
- 7.2 • Provide reflective foil to all external walls.

## Energy Management

- 8.1 • Provide low energy water heating system (eg. Solar water system with electric booster, heat exchange system)
- 8.2 • Air-conditioning system shall be inverter split system.

## Water Conservation

- 9.1 • AAA rated water efficient tapware and dual flush toilets
  - AAA rated aerated shower rose
  - AAA rated tapware and flow regulators

## Garage and External Storage Areas

- 10.1 • Carport or garage provided
- 10.2 • Carports, garages and outbuildings to be constructed of same materials as main dwelling if larger than 15 square metres in area
- 10.3 • Bin storage, clothes line and drying areas screened from public areas



## Best Practice Criteria – Rebate Options

You could receive a rebate from LandCorp of up to \$5,000.

To receive the LandCorp rebate, you need to include the initiatives outlined below in your house and landscape design.

To claim the best practice rebate call LandCorp upon reaching practical completion of the house.

- The criteria are voluntary options for the purchaser but are recommend by LandCorp for their environment and economic benefits.
- All criteria must be achieved to practical completion within 30 months from the date of settlement.
- Documentation of compliance (as per checklist below) stating relevant actions have been undertaken and achieved must be submitted.
- A visual verification of the premises by a LandCorp nominated assessor may be undertaken prior to payment of the rebate.
- The rebate is offered only to the initial purchaser of the lot. No purchasers of on-sold lots will qualify for the LandCorp rebate.

Sustainability Initiative	Sustainability Initiative	Rebate Amount
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### Sustainable Design Measures

11.1 • Louvre windows (Minimum 6 louvre windows)	• Letter of compliance with accompanying photographs from the builder/architect on completion of the development.	<b>\$1,500</b>
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### Energy Management

12.1 • Low energy water heating system (eg. Solar water system with electric booster, heat exchange system)	• Letter of compliance with accompanying photographs from the builder/architect on completion of the development.	<b>\$1,000</b>
12.2 • Inverter split air conditioning system	Note: to receive rebate, all air conditioning systems in residence must be inverter split air conditioning.	<b>\$1,000</b>

### Landscape Management

13.1 • Provide sub surface irrigation to landscaping including lawn area to the rear of the property	• Letter of compliance from landscaper. Note: This is in addition to LandCorp’s front garden landscaping package.	<b>\$500</b>
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### Water Conservation

14.1 • Installation of WA Health Department approved greywater treatment/ reuse	• Letter of compliance from architect/designer at the end of the design and specification stage. • Letter of compliance with accompanying photographs from the builder/architect on completion of the development.	<b>\$1,000</b>
<b>MAXIMUM TOTAL REBATE</b>		<b>\$5,000</b>



## LandCorp's commitment to sustainability

A sustainable approach to our use of land will strongly shape the future of our society. To meet the needs of both current and future generations, we must consider all the effects of our actions: environmental protection, social advancement and economic prosperity.

As the Stage Government's land development specialist, LandCorp applies the principles and practices of sustainable development across Western Australia, learning more and improving outcomes on all projects. At LandCorp we are committed to reduce our ecological impact and enhance the community's quality of life.



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