



energy use

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Your one-stop shop
for building sustainability

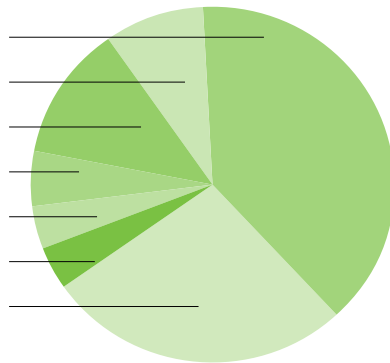


Houses in Cairns use an average of 20kWh of electricity each day. Over a year this is \$1375 that the average home spends on their electricity bill¹ or 7300kg of greenhouse gases. What can you do to save money and make your home more comfortable in the future?

Breakdown of average daily energy consumption:

Energy consumption

- 39% space heating/cooling
- 9% refrigeration
- 12% other electrical appliances
- 5% lighting
- 4% standby energy
- 4% cooking
- 27% water heating



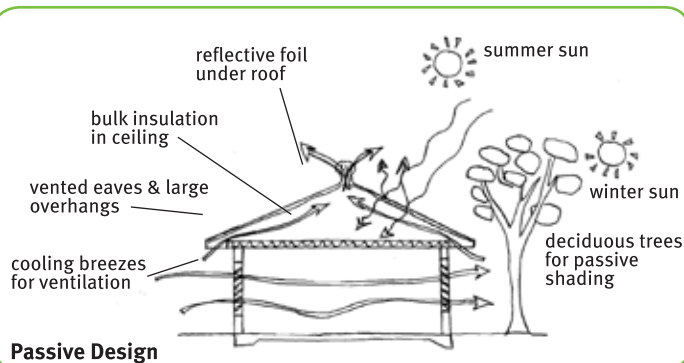
Cooling your home

In the tropics, air-conditioning your home accounts for around 40% of your energy costs. This means that around \$550 is being spent each year on keeping your home cool. There are many things that you can do to cut down on electricity use and make your home cooler.

Passive Design

Passive design takes advantage of the natural climate to keep a home cool in summer and warm in winter. In the Far North consider:

- Shading all walls and windows using appropriate planting of vegetation or shade structures.
- Encourage movement of breezes through the building (cross ventilation) by opening windows and using ceiling fans.
- Choose light coloured roof and wall materials.
- Insulate and ventilate your roof space (see Insulation fact Sheet).
- Tinting windows or installing external shading devices to reduce solar radiation into the building.



Did you know that using ceiling fans in all living areas and bedrooms will more than halve your cooling requirements²! That could mean a saving of more than \$225 each year.

Green at Heart has design consultants who are able to assist in developing a plan to make your home naturally cooler. We can also arrange to install insulation to dramatically cool your home.

Air-conditioning

Let's face it, sometimes we just have to use air conditioning in the Far North, but there are many things we can do to ensure that they are running efficiently.

- Always choose the most efficient model for your application.
- Compare the energy ratings before purchasing.
- Shade the outdoor components of the air conditioning unit and ensure pipes are insulated.
- Set the air conditioner to 25° as every degree of extra cooling will increase energy consumption by about 5-10%³.
- Close windows and doors to ensure the air conditioner is cooling the smallest amount of space possible.
- Use curtains, blinds and pelmets to keep cool air in and hot air out.
- Adjust louvers to point cool air towards the ceiling because cold air falls.
- Set timers to ensure the air conditioning is not running more than it needs to be.

Hot Water

Heating water requires a lot of energy and accounts for about 30% of our energy costs. This is around \$345 each year if using an electric hot water system. One of the simplest things we can do to save money and electricity is to reduce the amount of hot water being used in our homes. Why not:

- Install water efficient shower heads and taps.
- Use a shower timer and have shorter showers.
- Wash clothes in cold water instead of hot.
- Immediately repair leaking hot water taps.
- Turn off your hot water system when going on holidays.
- Keep your kitchen flick-mixer in the cold position.
- Rinse dishes under cold water.
- Set your hot water system thermostat at 60 degrees Celsius.

The best thing you can do however is to use the natural heat of the sun to heat your water (see Hot Water Fact Sheet). Why not install a solar hot water system?

Green At Heart can provide you with a quote to install the most appropriate hot water system for your home.



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Lighting

Types of lights – Energy required for lighting has been rapidly increasing as houses become larger and more light fittings are installed per home.

Lighting Choices – Cost and Greenhouse Comparison⁴

	18-23W CFL	100W Incandescent	2x35W Halogens
Average usage per day	4 hours	4 hours	4 Hours
Electricity used per year	34 kWh	146 kWh	117 kWh
Cost per year (@ 19c/kWh)	\$6.46	\$27.74	\$22.23
CO ₂ produced per year	34kg	146kg	117kg

So what can you do to reduce the energy used for lighting:

- Consider the lighting choices for your house and make use of natural lighting wherever possible.
- Replace incandescent globes with compact fluorescent's (CFL's).
- Turn off unnecessary lights including fluorescents when you are not in the room.
- Clean your light fittings regularly to allow more light to pass through.
- Outdoor spotlights use a lot of energy so turn them off if you are not outside.
- Provide multiple switches to control a number of lights so that they do not all have to be on at once.
- Dimming incandescent bulbs (including halogen) will save energy and increase globe life.
- Consider replacing halogen down lights with Light Emitting Diodes (LED's) that are extremely efficient.

Did you know that replacing 10 incandescent globes with compact fluorescents will save you around \$212 per year when used for an average of 4 hours per day.

Appliances

Electrical appliances in our homes are on the increase. Remember to:

- Choose wisely when purchasing new appliances and consider their energy rating. (Check out www.energyratings.gov.au).
- Think before buying – do I really need this?
- Turn the TV and computer off when not using them.
- Turn appliances off at the wall when not in use.
- Use the clothesline to naturally dry clothes, instead of the dryer.
- Wash a full load of clothes using cold water.
- When using the dishwasher, only run when fully loaded and use an economy cycle where possible.
- Remember to switch power off at the wall as the standby function uses 4% of average household power or more than \$55 each year.

Have you considered installing a solar power system? They can greatly reduce your power bills and save you money. See our Solar Power fact sheet or ask us for more information.

Refrigeration

Refrigeration accounts for about 10% of the average home energy use and is a very important part of the modern lifestyle.

There are many things that you can do to ensure that your fridge and freezer are as economical and efficient as possible:

- When upgrading or replacing your fridge or freezer, consider the energy rating. A 4-star fridge/freezer uses \$800 less electricity than a 1-star model over 10 years⁵.
- Make sure the door seal is clean and in good condition. It should hold a piece of paper tightly when door is closed.
- Ensure there is at least 75mm of space around the fridge including the top to ensure adequate ventilation.
- Place the fridge/freezer in a cool spot out of direct sunlight and away from stoves and dishwashers.
- Avoid putting hot food in the fridge or freezer.
- Set the fridge thermostat for between 3 and 5°C. (A fridge thermometer is a great investment.)
- Turn the second fridge off if it is not needed. (An empty fridge costs you money – up to \$250 per year!).

Green at Heart can help you with all of your energy saving requirements.

¹ Ergon Energy

² 'Your Home- Design for Lifestyle and the Future Technical Manual', Department of Environment, Water, Heritage and the Arts, 2008.

³ 'Your Home- Design for Lifestyle and the Future Technical Manual', Department of Environment, Water, Heritage and the Arts, 2008.

⁴ HSA Training Manual, Energy Makeovers, 2009

⁵ www.energyratings.gov.au For a 300-400L fridge/freezer at 19c/kWh.