

Queensland Communities in Transition

Eco-efficient homes in rural environments

Sustainable homes meet their owner's needs whilst also offering significant financial benefits. Don and Jeanne Parry set out to design, build and run their home in Kandanga in the Mary Valley south west of Gympie so that it was both environmentally sustainable and economic affordable.

Key features include:

- Passive design to avoid the need for air conditioning
- Generation of enough renewable power to be a positive exporter to the grid
- Onsite water collection and treatment of wastewater
- Recycling of waste



3 kW solar PV on roof of shed

"So often the housing affordability debate is only about the initial building cost. We believe household 'running costs' also play a very significant role around affordability. We believe that savings in energy, water, wastewater and waste costs release income".

Don Parry, Homeowner

HIGHLIGHTS

- Home has no net utility bills. Income from solar pays for wastewater treatment systems servicing and waste collection.
- Ozzi Kleen RP10 is a ten person Home Sewage Treatment system, utilising the Fully Aerobic Activated Sludge technology wastewater which irrigates lawn.
- Composting, recycling and Containers for Change scheme has enabled 240 L waste bin to be reduced to a 140L bin.
- In the peak of summer when external temperature exceeded 40°C internal temperature do not exceed 30°C.

Key Features

Passive design

The Parry's modern mid-sized home does not need air conditioning in summer or excessive heating in winter (located in a sub-tropical climate where temperature range from 0 to 40°C).

Passive design features employed included:

- High grade roof line foil insulation
- Green board insulated external wall panels then rendered.
- Covered verandas on east, north and southern sides
- Light coloured roof to reflect heat
- Tanks and shed positioned to provide protection for the western side of the home from the hot afternoon
- Window placement and fans to allow maximum use of natural ventilation.

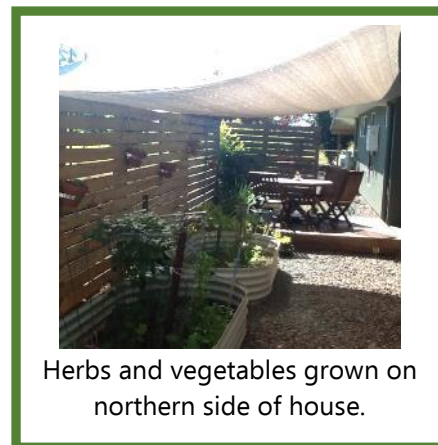


Sewage Treatment system, utilising the Fully Aerobic Activated Sludge technology

Renewable power generation

The home is connected to mains power. One of the Parry's key objectives was to be a significant net exporter, with the view to harvesting the energy when battery storage becomes more affordable.

- 3kW solar roof top system installed on shed. Payback period was two and half years.



Herbs and vegetables grown on northern side of house.

Waste

- All organic waste is composted and used to fertilise the home's herb and vegetable gardens. Composting done using staged bins.
- Fully engaging in recycling and the Containers for Change scheme has enable the home to switch from a 240L waste bin to a cheaper 140L bin.

Water harvesting and treatment

Town water and sewerage were not available on this property

- Two x 22,000 litre rainwater water tanks
- OziKleen wastewater system. Treated water is used to irrigate the lawns.

