

Organisation Profile

Koolkuna provides a range of support services aimed at meeting the needs of women and children affected by domestic or family violence.

Koolkuna is a community initiated incorporated body with a mandate to reduce the incidence and minimize the effects of Domestic and Family Violence and lead the coordination of local service responses and provide safe, temporary accommodation, casework services and practical assistance in order to increase clients capacity to make informed choices.

Energy and Greenhouse Audit Summary

The Energy and Greenhouse Audit was conducted on the 21st April 2010. The auditors analysed the electricity, gas and water consumption of the site, determined key behaviours regarding energy and water usage through interviews with staff and critically assessed the property's energy and water efficiency.

There are a number of key energy and water structural issues with Koolkuna:

- The residential units had either no or old insulation with a poor insulation value;
- The inefficient lighting and lack of natural lighting;
- Old inefficient gas heaters;
- Ineffective evaporative-cooling.

The behavioural issues at Koolkuna included:

- Leaving lighting on;
- Leaving the air-conditioning on and setting at an inappropriate temperature;
- Excessive water use.

Recommendations

The following recommendations were provided to the management at the Koolkuna. They include both behavioural recommendations and potential retrofitting.

1	Place external shading on the northern window of unit 4
2	Consider installing movable awnings on the eastern and western windows
3	Consider installing reflective tinting on the laundry windows

4	Install insulation of at least R3.5 in the ceilings.
5	Reconnect flexible piping over the staff bathroom exhaust fan.
6	Place weather stripping on front and laundry doors.
7	Install pelmets an all windows.
8	Install curtains and pelmets along all the glass in the lounge kitchen and children's play room areas.
9	Consider installing skylights
10	Consider replacing the downlights with either LED lights or dimmable fluorescent lights with electronic ballasts that can be connected to photo and motion sensors
11	Consider installing gas bayonets in the units and provide efficient (7 star) gas heaters.
12	Consider upgrading the existing gas heaters to efficient models
13	At failure of the next halogen downlight transformer, begin trialling substitute LED lamps.
14	Consideration should be given to changing all security lights to light sensor control.
15	Defrost the fridge regularly.
16	Insulate pipes from the hot water systems on the outside and in the ceiling.
17	Consider installing a solar hot water system (SHW).
18	Replace all shower heads with low flow shower heads these are available to flows as low as 5-6 litres per minute.
19	Install flow-restrictors and aerators to basin taps, or replace basin taps with replacing with more efficient fittings.
20	Fit flow restrictors to, or replace kitchen taps.
21	Consider replacing washing machine and dryer with more efficient models.
22	Consider altering the irrigation system to a drip reticulation. Each station should feed plants with similar water needs.
23	Consider installing one or two large water tanks (possibly 10 kL each).

Retrofits

Insulation

Insulation was installed in the roof space above the accommodation units. This included the removal and safe disposal of old ineffective insulation. The insulation that was installed was glass wool bats with an R-value of 3.5. The insulation would have had a significant effect on heat and cool air retention in winter and summer respectively, resulting in significant reduction in energy use and increased comfort levels. The insulation was funded through an alternative funding stream.

Photovoltaic System

A 3.6kW photovoltaic system has been installed at Koolkuna. This will provide them with approximately 6350kWh of self-generated electricity per year. This will reduce their energy use by up to a quarter and reduce 6351kgs of GHG emissions per year.

Lighting

The lighting was replaced at Koolkuna. This included replacing fluorescent tubes with high efficiency fluorescent tubes, replacing halogen downlights with LEDs, and two halogen floodlights with LEDs. The total saving to Koolkuna over five years will be approximately \$8,000 in lighting costs alone.

Skylights and Roof Ventilators

One skylight and a light diffuser were installed, reducing the reliance on artificial lighting and improving the light quality of the accommodation sections of the property. In addition, a roof ventilator was installed, which would remove any build-up of heat in the roof cavity.

Gas Heaters

Two gas heaters were installed, in replacement of older, less efficient ones. The new gas heaters were also flued, making them safer than the older models, by reducing risk of build-up of carbon monoxide in closed spaces.

Summary

Koolkuna provides an essential service to women and children who are the victims of domestic and family violence, by providing temporary accommodation. The site can have multiple families at any one time. Energy use is often quite high as residents have a myriad of challenges and energy efficient behaviour is not at the top of their list. Therefore, it was important to retrofit this property as to reduce energy use, without impacting on the recovery of the residents.