



Good Shepherd Nursing Home

How Good Shepherd Nursing Home reduced electricity consumption by 20%*

Located in Townsville, the Good Shepherd Nursing Home comprises 13 residential, staff and service buildings with a total air conditioned floor space of 10,200 square metres. The tropical climate means air conditioning is necessary all year round, and it was accounting for 60% of the Home's electricity spend.

Expansion plans provided an opportunity to review Good Shepherd's cooling systems to ensure the ongoing comfort of their elderly residents. Modernising and centralizing air conditioning has made the home a showcase for energy efficiency in tropical Queensland.

Savings Snapshot

The benefits of installing a Central Energy Plant



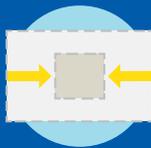
Energy

Lower energy usage, higher reliability and lower maintenance costs



Electricity

Reduced electricity consumption and access to off-peak tariffs



Land

Reduced land footprint required as opposed to a multiple chiller and DX plant



Pipework

Reduced replacement costs due to refurbishment of aged pipework serving existing buildings



Buildings

Reduced capital cost for constructing new buildings

An investment with ongoing returns.

The capital cost of installing a Central Energy Plant with a low load Thermal Energy Storage tank was \$1.4 million, \$300,000 less than a 'business-as-usual' solution—a significant saving now that also helps contain ongoing costs into the future.

More efficient cooling has helped Good Shepherd Nursing Home reduce their electricity consumption by

20%*

*energy savings shown are from an independent auditor's measurement and verification, report conducted 2011.

Money Saving Choices



A complicated challenge

2007 forecasts showed Good Shepherd's electricity demand would exceed its capacity of 1000kVA by 2010 with the load increasing from 735kW to 915kW.

The existing air conditioning plant was piece-meal: a mix of chilled water systems and multiple DX ducted and split systems. The chilled water systems were unreliable and air-cooling was inefficient in consistently hot weather. Maintenance costs were high due to equipment being in various locations across the site.



A simple solution

Good Shepherd's management implemented Smart Energy Management Concepts, beginning with retiring air-cooled plants and replacing the three chilled water systems with a Central Energy Plant with a Thermal Energy Storage Tank. This up-front investment would meet all cooling requirements of existing and planned buildings. The new system could re-use some existing pipework, helping keep costs down.

To boost efficiency, Good Shepherd painted roofs with heat-reflective paint and installed a heating solar system to pre-heat laundry and kitchen water.

They're also trialing LED lighting in the laundry and considering upgrading to LED's elsewhere in the Home, as well as installing a 60 kW roof solar array.



An aged care facility for the future

The changes made to Good Shepherd's air conditioning systems mean no upgrades will be necessary—despite plans to expand the home by an extra 1,500 square metres. The cost of the building program will be less than expected because the air conditioning infrastructure is already in place.



Above: Thermal Energy Storage tank (at bottom right) with air-handling units above.

Your turn

Go to “Save on your bill” at ergon.com.au/your-business to help you choose an energy efficiency consultant and take the first step towards reducing your energy costs.

