

Catholic Care Social Services

Community Centre, Parramatta NSW

Rising energy prices, but unsure about how to cut their energy costs, they sought out energy efficiency information to identify action they could take to become more energy efficient.

Opportunities at a glance

Projected savings top 5 opportunities:

\$3000 per year

Estimated investment top 5 opportunities:

\$12,000

Projected savings all opportunities:

\$7500 per year estimated Investment

All opportunities:

\$6000

People, place, potential

CatholicCare Social Services - Diocese of Parramatta (CCSS) aims to serve the community of the Catholic Diocese of Parramatta by overseeing the provision of high-quality social services, while operating according to the principles of Catholic Social Teaching. The Parramatta office acts as one of the central administrative locations for the organisation, as well as having rooms to conduct a range of social service activities.

The office is located on the ground floor of a three level building. The office space is leased from the Catholic Education Office, who occupy the middle and top levels. The building itself is 25+ years old, and electricity is the only energy source used on site. As each level is not individually sub metered, electricity costs for CatholicCare are one third of the total building usage. Costs for CatholicCare are approximately

\$27,500 per year, representing usage of approximately 150,000kWh per year. From the quick observation of the Catholic Education Office levels it is likely that the other levels are more energy intensive than the CatholicCare ground floor, suggesting that the one third split overestimates the usage and cost of energy by CatholicCare.

The Diocese is in the process of planning for a new building that both CatholicCare and Catholic Education would move into. An Indicative timeframe for this move is around 3 to 5 years.

Energy efficiency measures already implemented:

- Lighting sensors installed through office.
- Light switches in the majority of individual offices / consulting rooms allow lights to be switched off when not in use.

Energy efficiency measures currently planned:

- HVAC Chiller units for whole building are scheduled for replacement over Christmas break (by Catholic Education Office).
- Lighting upgrade for whole building is being considered (by Catholic Education Office).

The Blacktown office is located within the grounds of the St Patricks Parish of Blacktown and consists of a number of small consulting rooms for interviewing with staff. The building itself is

sandstone, which provides a good thermal insulator to maintain internal comfort levels. Each room typically consists of lights, computer and its own split system air conditioner, all of which is generally switched off when the room is not in use.

Associated and adjoining the Blacktown office is the All Saints of Africa Centre. This comprises a small house with minimal equipment and two demountable accommodation containers which are used by the community for gatherings. Both demountables were donated and contain basic lighting and come equipped with window based air conditioners.

These are used most evenings through the week and are fully booked all weekend.

Current activities

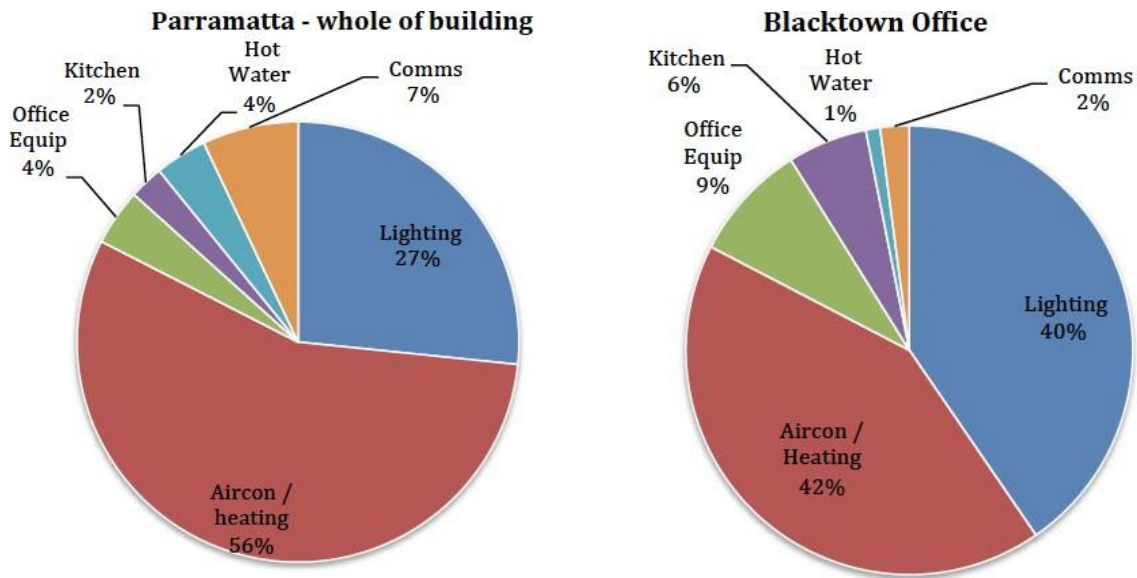
Electricity only is used at the site. As a section of the parish centre is leased out, part of the energy consumption for this building will need to be charged back to the tenant. A method for this charging has still to be defined, but it is advised that this should account for any energy savings made via this exercise or any future energy drives (e.g. how would the installation of solar panels affect these costs). Each of the buildings has a separate electricity meter. Annual costs for this site are approximately

\$1400 per year for the cathedral, \$2800 for the presbytery and \$1500 for the parish centre. This represents an annual usage of approximately 23,000kWh per year of electricity.

Looking at the tariffs for each building, it appears that they are all on different rates – only one of which is a not-for-profit rate. There may be an opportunity to reduce costs by renegotiating these tariffs so that they are all on the same not-for-profit rate. It is estimated that around \$500 per annum could be saved by doing this. This simply requires a phone call to the supplier to discuss.

- Heating, Ventilation and Air Conditioning
- Lighting
- Hot water (Parish centre only, solar in presbytery)
- Kitchen appliances
- Domestic refrigeration

The estimated split of energy between this equipment is shown in the diagrams below.



Energy efficiency opportunities

Looking at the whole site there are a range of opportunities we suggest, and these include:

Opportunities	Description	Estimated savings (\$/yr)	Estimated Cost (\$)	Indicative payback (yrs)
Efficient Lighting	<p>Building lighting upgrade. This should include consideration for:</p> <ul style="list-style-type: none"> Changing from T8 to T5 fluorescent tubes or LED equivalents Integration of timer / PV sensor in car park Motion sensor in car park with minimum lighting levels Voltage optimisation Motion sensors on other levels 1 and 2 	\$6,400	From \$20,000	3

HVAC Upgrade	<p>Upgrade of HVAC due to recurrent breakdowns and maintenance issues associated with long operating life. This should include consideration for:</p> <ul style="list-style-type: none"> • upgrade of chiller units • variable speed drives on air handling units • balancing of system to ensure temperature is maintained uniformly 	\$4,500	\$\$\$	>5
HVAC	External shading on western side to reduce heat load on summer afternoons. Less efficient alternates might be internal blinds if not already installed.	\$900	\$3,000	3
Renewable Energy	Change tungsten filament globes for LED.	\$10,000	\$90,000	9
Hot Water	Reduce thermostat setting on hot water system down to 55°C. It is not recommended the thermostat be lowered any further than this level.	\$300	low	<1 year
Office Equipment	Enable Energy Star functionality on all computers to enable computers and monitors to go into standby or sleep mode when not in use.	\$160	\$0	<1 year
HVAC Controls	<p>Use higher setpoint during summer months and cooler through winter. During site visit, setpoints were 17, 20°C and 25°C. Suggest these all get adjusted seasonally, e.g. 23 - 24°C in summer and 20 - 21°C in winter.</p> <p>This opportunity also applies to the dedicated cooling unit in the server room. 2008 ASHRAE ICT equipment environment specifications for Class 1 data centres allow for temperature setpoints of 25°C ± 1°C.</p> <p>Some additional costs may be needed in relation to temperature sensor install and calibration.</p> <p>Further savings would be achievable if opportunity was rolled out to the other levels due to energy bill splitting arrangement.</p>	\$950	\$0	<1 years
Lighting	Delamping of lighting in well let offices around the perimeter. Option to integrate with PV Sensor (more costly).	\$130	Low	<1 year
Kitchen Appliances	Timer for water cooler to turn off out of office hours.	\$25	\$20	1

Lighting and Office Equipment	Raise further awareness on switching lights and equipment off when leaving the room. Staff appear well motivated to switch off lights, should be extended out to computer equipment and other office devices (shredders, smart boards, projectors, etc) Suggestions of posters / signs at room exit beside light switch.	\$75	\$0	0
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Opportunities	Description	Estimated Savings (\$/yr)	Estimated Cost (\$)	Indicative Payback (yrs)
Lighting	Delamping of lights in lower demountable so that it is similar to the uphill room.	\$500	\$0	<1 year
HVAC	Regular maintenance of systems, cleaning filters.	\$100	\$Low	<1 Year
Solar Lighting	Solar lighting for covered walkways. Currently unlit, with some people avoiding the area at night.			
Efficient Lighting	Consider upgrading existing T8 fluorescent lighting technology to T5 fluorescent tubes or LED equivalents.	\$1,600	\$5,000	3
Solar PV	Install solar PV on church roof or as ground mounted in adjoining land. Need some consideration as to how it would be connected into CatholicCare electrical circuit. Estimated savings and costs associated with 10kW system.	\$4,500	\$25,000	6
St Marys Solar Farms	Long term planning around redevelopment of large vacant property at St Marys. Explore potential for Solar Farm.			
TOTAL	Cumulative total for all opportunities	\$30,140	From \$143,020	

Top opportunities

Based on the audit and an interactive workshop with staff, the following activities were identified as the Top 5 energy efficiency opportunities for CatholicCare Social Services Parramatta NSW:

1. Office equipment (Parramatta and Blacktown)

Initial Action: Communicate with staff, implement some settings

Owner: Office manger

2. Solar lighting for covered walkway (Blacktown)

Initial Action: Explore costs

Owner: Site manager and relevant financial manager

3. Lighting – delamping in demountables (Blacktown)

Initial Action: Instruct electrician

Owner: Site Manger

4. Lighting – efficient lighting upgrade

Initial Action: Assess acceptable lighting levels

Owner: Site manager

Energy assessment outcomes

Note that the estimated savings for the Parramatta whole of building opportunities are based on the benefits to the overall building. Savings attributable to CatholicCare would then be one third of indicated value.