

# LGSWA CaseStudy – Energy

## Energy Audit for Nido Early School - Willetton

In November 2021, Nido Willetton hosted the LGSWA Energy Air and Transport workshop for early years educators in their purpose-built centre in Willetton. Anthea, the Curriculum leader, acknowledged 'We are all on the path of improving our practices in this world'.

As a 'thank you for hosting' the City of Canning, through LGSWA, funded an audit by Alan Benn. Alan is the owner/operator of the Commercial and Home Sustainability Audits (CHSA) and he audited the Centre and analysed energy bills to give a 'Report of Recommendations'. The results from this face-to-face process was enlightening and encouraging, with short-term changes possible and long term solutions outlined.



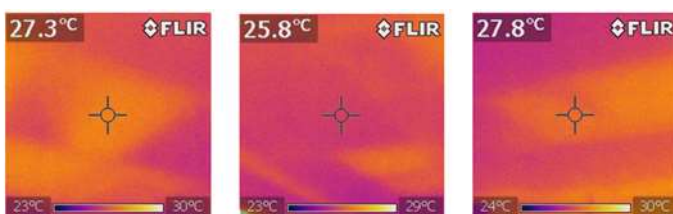
Photo: Nido Willetton east facing windows, reception area and outside play

Anthea met with LGSWA in early April 2022, to review their progress and to share the energy solutions. Many can be transferable habits for educators and other services. Nido's purpose-built space is a two-storey setting with little natural shade potential in the future, so it is an ideal candidate for the long term recommendation of including solar panels.

The centre consumes between 80-100 units per day and potentially more in summer, heavy day time use, therefore solar generation would be well matched to consumption by investing in a 5-10kW solar system.

Nido's Kindy kids were involved in the assessment of heat loss from ceiling insulation as they experimented with Alan's infra-red heat sensor to monitor Miss Anthea's body temperature. This experience helped them transfer that understanding of heat loss when Alan used sensors on the ceiling.

The sensors indicated that the ceiling batts were not working effectively to reduce heat in summer or prevent heat escaping in winter.



The different colours and rectangular regions in these photos shows that the insulation batts have been moved and are not providing a complete insulating cover. The insulation should be checked and



## Links



### EYLF:

**OUTCOME 2:** Children are connected with and contribute to their world.

**OUTCOME 4:** Children are confident and involved learners

### EFY:

**ENERGY:** Conserving energy and deriving our energy supplies through renewable sources

**WATER:** Conserving water and protecting the health of our waterways and oceans

**PURCHASING AND WASTE:** Reducing consumption, choosing environmentally and/or socially friendly products, and effectively managing waste streams in the most environmentally-friendly way possible

### SHP:

#### **STUDENT AND STAFF WELLBEING:**

Supporting the physical and emotional wellbeing of students and educators now and into the future

#### **ECONOMICS, BUILT**

#### **ENVIRONMENT:**

Saving money through effective utilities management; raising money for environmental and social justice projects; creating a harmonious, vibrant, ecologically-sound teaching and learning environment

### SDG:

**GOAL 7:** Ensure access to affordable, reliable, sustainable and modern energy for all

**GOAL 12:** Ensure sustainable consumption and production patterns

This glass windowed building is north-south facing and despite some shade sail installations, this still lets heat through at hot times of day. The ineffective window tinting then traps heat inside, the Centre. Alan recommended shade sails over east facing windows, the outside play area on the first floor and over the north-west window of the nursery. The shade sails will be removed in autumn to make use of winter solar heat was suggested as a long-term consideration for future planning.



Anthea said that 'Nido has begun the steps to invest in these longer term solutions but in the meantime we have set up daily practices for both staff and children to reduce our impacts on energy and water use. Our room 'electricians' are back in action this year, checking we turn off lights and power when we leave rooms.



The Centre policy now directs that air-conditioner thermostats are set at optimum temps for each room, 24-26C in summer and 20-21C in winter. With temps reduced, the AC fan speeds increased to distribute the cooling effectively with signs near AC controls to remind staff of this.

Lights are mostly LED in the centre but after the audit Anthea will fix the outside sensor light and install reflective film on the large window of the stairwell which gets very hot.

Some challenges exist for Nido with regard to their dryer use but the audit did highlight the benefits of an energy efficient washing machine. With up to 6 loads per day this adds up. Alan highlighted that the Nido washing machine would use 1 unit (1kWh) per load or 6 units per

day in Nido's case, rounding up to only \$1.50 per day – a great saving.

On the downside water consumption for the 6 washes equate to using 462 litres per day. After the audit Nido are now trying to use their dryer less, as even though it is a condensing model, it costs \$1 per load and the warm air circulating exacerbates building heat issues in summer.



Fridge use and energy ratings were also revealing for Nido as their 3star fridges (242 kWh) in the kitchen use 20c per day whereas the small 1 star bar fridges in some rooms draws more power than this (280kWh).



This audit has been a great lesson in the need for us all to take little green steps to make change. It can also provide services with a targeted plan as

Nido found out when Alan assessed their water saving strategies. The centres water reticulation is permanently turned off now because children's plant watering habits provide enough for their waterwise plants and food crops to survive.

Anthea's reflection after the audit process highlights the importance of circular economy thinking ...'builders of new centres should consider energy efficient design before builds as sometimes it is more of a challenge to retrofit later'.

To access the full Energy audit report contact LGSWA [lgs@aaeewa.org.au](mailto:lgs@aaeewa.org.au) If you are a residents and/or businesses in the City of Canning you can contact the Council to ask how to be 'Climate Clever'.