

Department of Education & Communities NSW, Australia

Energy Performance Contract

The NSW Department of Education achieves immense cost savings across multiple school campuses with energy efficiency solutions.

EPC Outcomes

Achieved Cost Savings **\$454,775/yr**

Achieved Electricity Savings **1,850 MWh**

GHG Savings **2,000 tonnes/yr**

Financing **From Savings Only**

Overview

The New South Wales Department of Education and Communities (DEC) offers all stages of education from early childhood to tertiary learning. DEC takes a holistic approach to creating a sustainable society and ecosystem with efficiency integrated within their development and investment strategies.

The Goal

As part of their energy efficiency policy, the DEC engaged in an Energy Performance Contract (EPC) with Conservia for 15 schools across NSW. The schools included were Botany Public School, Daceyville Public School, Forest Lodge Public School, Holroyd School, Katoomba High School, Leichardt Public School, Northern Beaches Secondary College (Freshwater Campus), Noumea Public School, Orange Grove Public School, Rockdale Public School, Sarah Redfern Schools, Tempe High School, Tempe Public School, Terry Hills Public School & Whalan Public School.

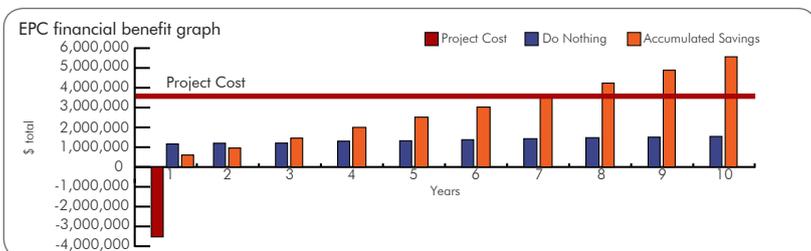
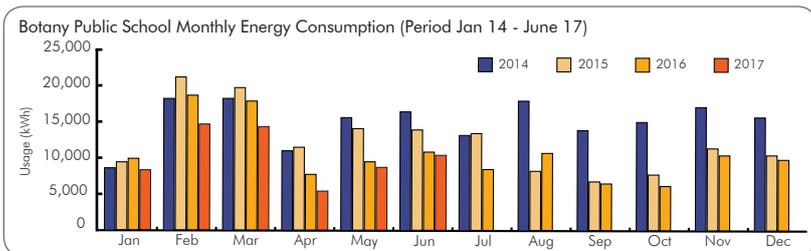
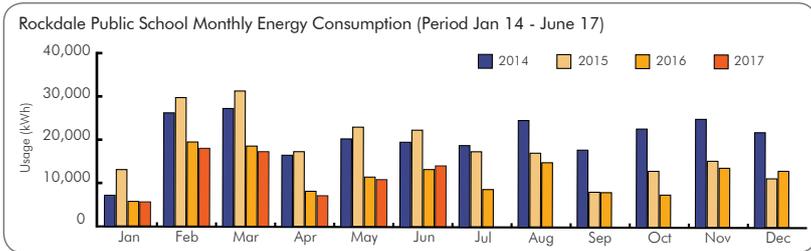
The schools included in this green initiative are all on their way towards net zero emissions, becoming more sustainable and environmentally friendly.

The Solution

The EPC was implemented between 2015-2017 and included the installation of energy and water conservation measures throughout all the schools. The energy and water saving measures implemented were the installation of solar Photovoltaics (PV), Light Emitting Diode (LED) light fittings, solar window film, installation of Building Management Systems (BMS), installation of Variable Speed Drives (VSD's), power factor correction, installation flow restrictors and installation of efficient cisterns.



- Installation of efficient T5 fluorescent lighting, LED down lights and LED external flood lights (overall ~10,000 fittings)
- Installation of solar PV system (overall 405 kW).
- New BMS in seven schools.
- Modification of constant volume systems to variable volume systems thus reducing reheating in one school.
- Installation of demand ventilation (CO2 based control in two schools).
- Installation of VSD's on air handling unit fans, chilled water pumps, condenser water pumps & cooling tower fans.
- BMS fine-tuning with optimum start/stop and temperature resets.
- Installation of solar film on selected windows in all schools
- Installation of power factor units in five schools.
- Installation of heat pump Domestic Hot Water (DHW) replacing electric DHW system in one school.
- Installation of flow restrictors on taps and installation of dual flush cisterns in all schools.



DEC improved their encapsulated sustainability innovations within all aspects of their buildings allowing them to maximise renewable energy opportunities and realised substantial electricity and water savings across all schools.

Conservia achieved an annual cost savings of **\$416,278** which was **0.45%** in excess of the guaranteed cost savings set out in the EPC.

Overall electricity & water consumption savings in excess of **0.5%** and **17%** were achieved.

DEC Savings



Electricity Savings
with Solar PV =
1,850,100 kWh/yr
(42% reduction)



Water Savings =
6,516 kL/yr
(13% of total)