



DAREBIN

THE FIRST VICTORIAN COUNCIL TO ADOPT ENERGY PERFORMANCE CONTRACT

CASE STUDY

DAREBIN CITY COUNCIL

VICTORIA

Darebin City Council have become the first Council in Victoria to implement an Energy Performance Contract to cut greenhouse gas emissions and water usage and guarantee energy savings for ratepayers.

Under the Energy Performance Contract, Darebin will save more than \$35,000 p.a. across eight council sites with the savings paying back the investment in less than 5 years. It will also ensure a better environment for staff and visitors at key Council locations, including libraries and community centres.

The energy performance contract included water conservation measures with the installation of control valves, new tapware and cistern modifiers in toilets.

Other energy conservation measures include heating, ventilation and air conditioning modifications and new lighting control equipment including fixed dimmers and occupancy detectors.

KEY OUTCOMES

ENERGY SAVINGS
\$35,900 PER ANNUM

GREENHOUSE SAVINGS
380 TONNES

WATER SAVINGS
3,285 KILOLITRES

KEY SOLUTIONS

- T5 LIGHTING RETROFIT
- INTELLIGENT OCCUPANCY BASED LIGHTING CONTROL SYSTEM
- CO-GENERATION AND ABSORPTION CHILLER
- DIGITAL BUILDING MANAGEMENT SYSTEM
- WATER FLOW CONTROL
- MONITORING AND VERIFICATION



Lessons & Outcomes

“The services upgrade was completed in just over 12 months without moving any of the 800 staff in this 18,000 square metre building”

“The cost of the project will be recouped in energy savings within five years. In a nutshell, Darebin will have guaranteed energy and greenhouse reductions that pay for themselves,”

Darebin's General Manager of Asset Management, Mr Geoff Glynn

Front Image | Department for Transport, Energy and Infrastructure, South Australia, Southern Tower Block.
1 | Using ECS MLS lighting control system on level 3
2 | 470 kW_e V12 Natural Gas Driven Co-Generation Engine



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Scope of Works

The energy performance contract included water conservation measures with the installation of control valves, new tapware and cistern modifiers in toilets.

Other energy conservation measures include heating, ventilation and air conditioning modifications and new lighting control equipment including fixed dimmers and occupancy detectors.

As well as improving energy efficiency, comfort levels for the 1.2 million visitors to the sites will also be enhanced through improved lighting, whilst better heating and cooling systems will lead to improve temperature conditions.

The sites that were included in the Energy Performance Contract included the Preston Municipal Centre, Preston, Reservoir and Northcote libraries, the Darebin Arts and Entertainment Centre, Fairfield Community Centre and Library, Reservoir Leisure Centre and the Reservoir Depot.

The biggest energy savings were achieved at the Reservoir Leisure Centre, which has about 252,600 visitors per year. Savings are worth about \$13,500 per year.

Efficient Lighting & Controls

The first stage of the project involved an overhaul of the lighting that delivered major savings on electricity bills while also reducing greenhouse emissions at the same time improving lighting levels and the visual environment.

All of the existing fluorescent light fittings were removed from the building and new high efficiency T5 fluorescent fittings were installed, complete with electronic dimmable ballasts.

In addition to the light fittings an intelligent lighting control system was installed incorporating automatic dimming and integrated occupancy detector control.

Heating, Cooling and Ventilation (HVAC)

The system was completely replaced. Rather than generating conditioned air in the plant room, eight fan/coil units were installed on each level (four per wing), accompanied by dual speed fans that run mostly at low speed. Hot and chilled water is pumped to each fan coil unit incorporating its own heating and cooling coil.

Variable Speed Drives

A co-generation unit is one of the key features of the new system. It is basically a natural gas-fired internal combustion engine that produces electricity and heat from the same primary energy source.

Water

The Water component of the new national rating scheme NABERS that covers a range of environmental improvement measures, was utilised to measure reductions in water consumption.

At this stage those changes include installation of flow controls on all showers and taps are projected to reduce water consumption by at least 2,000 kilolitres per annum.