

CITY OF UNLEY CIVIC CENTRE

ENERGY EFFICIENCY UPGRADES TO HEATING, COOLING, AND VENTILATION



TOMORROW MATTERS



The Unley Civic Centre is comprised of the civic centre itself, a library and a hall. Sustainable Focus was engaged by the City of Unley to identify opportunities to reduce energy consumption and then to design and implement a comprehensive upgrade to minimise consumption and costs whilst simultaneously improving the working environment.

OUR PEOPLE



Rob Smith
Technical Director & Project Manager

Rob has extensive experience in the Heating, Ventilation and Air Conditioning (HVAC) industry with expertise in energy efficiency, control system strategy, passive building design and solar systems.

Jake Bugden
Managing Director

Jake managed the lighting upgrade of the Civic Centre and other facilities.

CLIENT FEEDBACK

Sustainable Focus worked with Unley to understand our needs and then managed the design, installation and commissioning of a system that continues to support Council's sustainability objectives.

Alan Johns
Projects Manager
City of Unley

KEY OUTCOMES

GREENHOUSE
GAS SAVINGS

158

TONNES



ENERGY
SAVINGS OF

26%

ACROSS THE
OFFICE



ANNUAL ENERGY
REDUCTION OF

200,000

KWH



OVERALL
PAYBACK OF

4 YEARS



STAFF ENGAGEMENT

BUILDING MANAGEMENT TRAINING

SUSTAINABLE FOCUS WAS ENGAGED TO DESIGN AND IMPLEMENT A COMPREHENSIVE HVAC AND BMS SYSTEM UPGRADE



THE SOLUTION

The project was implemented through the Sustainable Focus four 4 Step Green Building Program

1. HIGH LEVEL REVIEW

Undertake a detailed review of the site and current air conditioning systems.

2. DESIGN

Design a cost effective upgrade solution focusing on re-use of air handling systems.

This stage included:

- Review of existing control system
- Review zones and temperature sensor locations
- Integrate economy cycle into existing air handling units
- Integrate variable speed drives to match demand and supply
- Design control strategies and associated trend reports to assist maintenance staff with fault finding

3. IMPLEMENTATION

Sustainable Focus managed all aspects of the project, including:

- Managing procurement, preparing tender documents, assessing, and recommending suppliers and installers
- Overseeing the supply and installation of equipment such as variable speed drives for fans, water pumps, and differential pressure sensors
- Installing a system to provide and report information to better manage the mechanical ventilation

4. VERIFICATION

- Data logging of HVAC energy consumption reduction
- Reporting on project outcomes

LIGHTING UPGRADE

The main luminaire in the facility has been retrofitted with a high performance reflector (LUXOFLECTOR) new electronic ballast, wiring, and lamp holders. Fittings are essentially brand new and are 60% more efficient.

HVAC BMS UPGRADE

The retrofit included a new Building Management System (BMS) as well as the installation of economy cycle dampers to maximise the use of fresh air for cooling. Variable speed drives have been installed to regulate pumps and fans.

Energy reporting software and electricity consumption meters were included which enables staff to manage assets and generate reports.

The BMS was designed by Sustainable Focus to maximise energy savings and minimise plant operation to reduce maintenance costs.

THE RESULTS

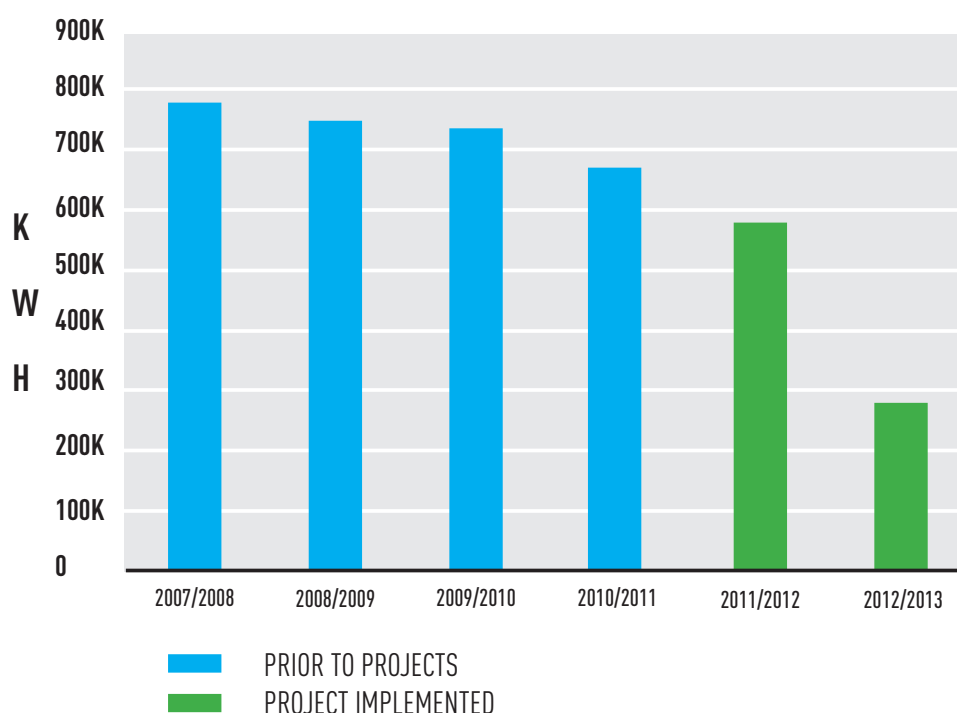
- The BMS upgrade has reduced energy consumption by approx. 25%
- Upgrades installed will reduce greenhouse emissions by 140 tonnes a year
- The upgrades allowed the maximum demand to be re-negotiated saving \$10,000 a year
- The payback is less than 4 years

OTHER BENEFITS INCLUDE

- Staff ownership and involvement in carbon reduction
- Improved building comfort
- Monitoring and reporting on data from the site is made easy
- Reduced load on chiller

The BMS enables enhanced operation scheduling

ELECTRICITY CONSUMPTION



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