

# SA PATHOLOGY

## ENERGY EFFICIENCY UPGRADES TO WATER SYSTEM AND HEATING VENTILATION AND COOLING



Sustainable Focus was engaged to facilitate energy efficiency projects by SA Pathology. Using our 4 Step Green Building Program, Sustainable Focus designed and project managed a comprehensive upgrade for the 18,000 m<sup>2</sup> site HVAC (Heating Ventilation and Air Conditioning) and water system as well as providing support for staff. The brief was to reduce energy costs whilst simultaneously improving work conditions.

### 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 heating systems.

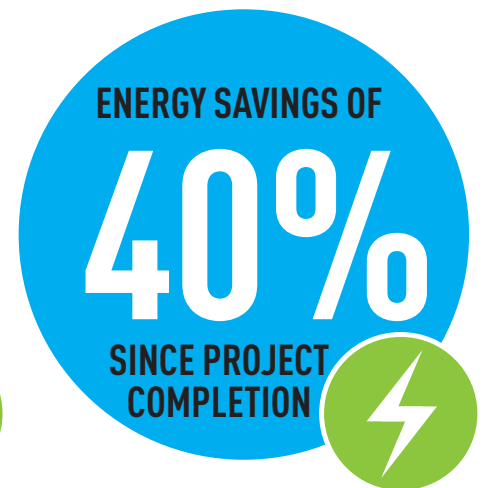
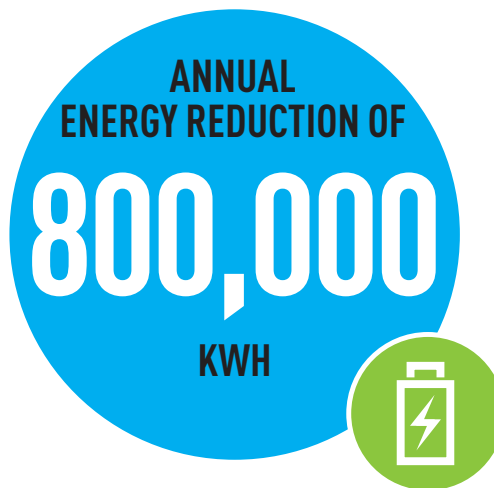
His comprehensive knowledge of these fields enables him to effectively evaluate the functionality of active and passive systems and implement site specific strategies to improve overall efficiency. Rob has many years' experience with governments and industry both within Australia and overseas and is a Certified Energy Manager with the Association of Energy Engineers.

### CLIENT FEEDBACK

Our partnership with Sustainable Focus has seen significant energy and water savings from simple measures. Sustainable Focus has been able to quickly identify the win-win of reduced operating costs and improved environmental outcomes.

**Chris Jeffs, Manager**  
Engineering Services, IMVS

### KEY OUTCOMES



**STAFF ENGAGEMENT**  
BUILDING MANAGEMENT SUPPORT

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



## THE SOLUTION

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

### 1. HIGH LEVEL REVIEW

Detailed review of the plant and BMS (Building Management System).

### 2. DESIGN

Design an appropriate cost effective upgrade solution and prepare a project plan to implement. Design and testing stages included a review of the current BMS, room by room reviews to monitor temperature and technology in place, a desktop review of the plant, and consultation with staff.

### 3. IMPLEMENTATION

Sustainable Focus managed all aspects of the project implementation, including:

- Procurement process; preparing tender documentation, assessing, and recommending preferred suppliers and installers
- Overssing supply and installation of equipment
- Installing a monitoring and reporting system to provide information to better manage the mechanical HVAC and water use
- Communicating with staff about the upgrade including staff surveys, visual displays, additional signage, emails, newsletters, and marketing materials
- Managing the project budget

### 4. VERIFICATION

- Data logging of HVAC energy consumption and water consumption from the cooling tower and newly installed Waste Water Re-Use system to provide performance data
- Reporting on project outcomes

### PROJECT DETAIL S

- The upgrade included installing a holding tank plumbed into the toilet block to use waste water for filling toilet cisterns. A new washer disinfecter was installed to make use of a simple re-use system that saves 30% of water used in wash cycle. Toilets have been converted from single flush to dual flush
- Upgrading the BMS has reduced demand on the cooling tower by lowering the running time of the chiller
- The roof has been treated with highly reflective paint to reduce plant room temperature and chiller load
- Heat reclaim systems have been integrated and control improved
- Differential pressure sensors have been installed and fans regulated. Ensuring equipment is operated in line with regulations
- Installing a monitoring and reporting system that utilises data from the BMS to improve management

### VISUAL DISPLAY

A visual display of energy and water consumption has been installed in the entrance foyer to the Frome Road Complex. The display unit is dynamic, with rolling pages containing text and graphics that can be easily updated.

### COMMUNICATION TOOLS

Sustainable Focus prepared updates for staff about the various projects that were circulated in emails and newsletters for staff and also in marketing for external stakeholders.

### SIGNAGE

Sustainable Focus worked with Michael Mullan photography to prepare simple and engaging signage to inform staff about how they could assist with saving energy.

## THE RESULTS

- On completion the HVAC upgrade will save \$104,000 per annum
- Greenhouse gas savings of 648 tonnes
- Average payback of less than 3 years

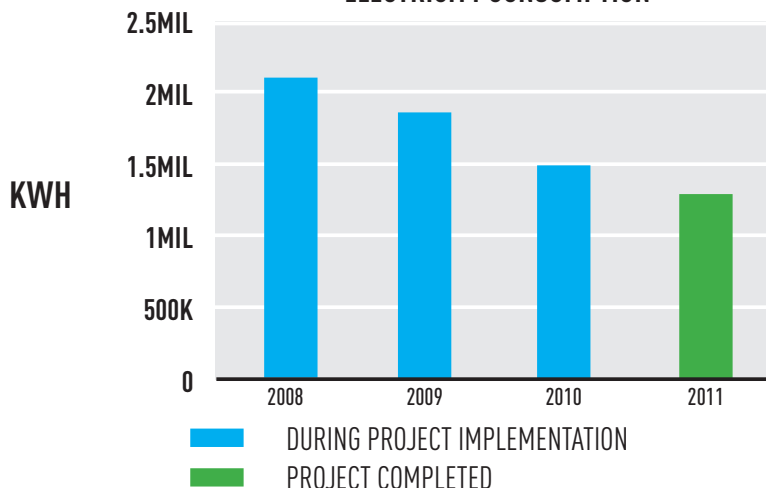
The implementation of a BMS enables enhanced operation scheduling and the ability to monitor and control lighting, heating, and cooling throughout a building. It also provides a wide array of manual control options for building occupants and diagnosis lighting, HVAC, and system problems. With all the benefits of a BMS comes minimized peak demand thereby reducing energy consumption.

### OTHER BENEFITS INCLUDE

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

Similar upgrades have been undertaken or are in progress by Sustainable Focus at the Flinders Medical Centre, Women's and Children's Hospital, Hampstead Rehabilitation Centre, Ambulance SA, Repatriation General Hospital and Coober Pedy Hospital.

### ELECTRICITY CONSUMPTION



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