

Case Study IMVS

Lighting efficiency upgrade



Key outcomes

- Lighting power density drop from 19 W/m² to 8 W/m²
- Total investment of \$257,000
- Simple pay back of less than 5 years

Background

The main IMVS complex has an annual energy spend of approximately \$680,000. IMVS Engineering Services commissioned Sustainable Focus to identify and manage the implementation of cost-effective measures to reduce energy consumption and cost at their facility whilst simultaneously improve the quality of the working environment.



The site

The Institute of Medical and Veterinary Science (IMVS) provides a comprehensive range of diagnostic and consultative services in all branches of pathology for the Royal Adelaide Hospital, private and public hospitals, medical practitioners, specialists and research organisations. The main IMVS complex is located on Frome Rd, adjacent to the Royal Adelaide Hospital and the University of South Australia.

The complex has a floor area of 18,000 square metres spread across 3 interlinked buildings and seven floors (including the basement). Most of the floor area is dedicated to laboratories and offices.

Key initiatives

- Retrofit existing luminaires with energy efficient control gear and high performance reflectors
- Installation of new energy efficient luminaires including reflectors

Savings

- Annual greenhouse gas emissions reduction of 370 tonnes of CO₂ (equivalent to taking 85 average passenger vehicles off the road)
- Annual energy saving of 375,000 kWh (46% site reduction)
- Annual cost saving of \$58,000 (including energy and maintenance savings)
- An average electricity saving of 60% per fitting

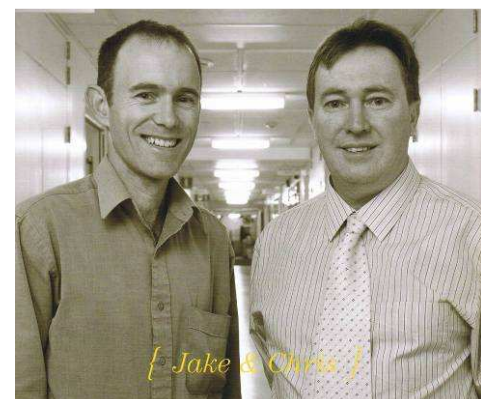
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Challenges

The lighting had been added to from time to time resulting in a non standard lighting grid layout and various types of lighting fitted throughout the premises. Although, the lighting fixtures found in the building varied from location to location, the main type of luminaire was found to be a 2x36W linear fluorescent, 1200x600mm recessed troffer fitted with a framed prismatic diffuser and low loss magnetic ballast.

The existing light fittings had inefficient control gear and older technology lamps, resulting in a lighting power density of 19W/m² which is very high compared to current industry standard.



Solutions

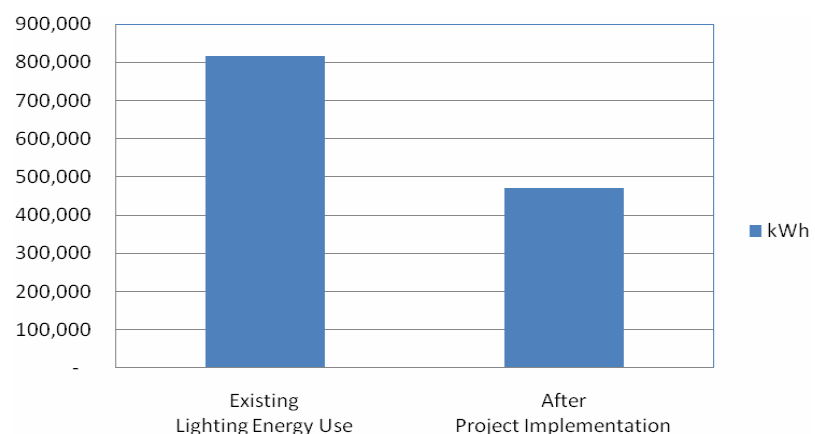
Sustainable Focus identified cost effective solutions to address the high energy consumption issues through the following approach;

- An analysis of electricity billing data
- Discussions with building management regarding current lighting management practices, opportunities for improvement that had already been identified and existing plans for capital works that may impact on lighting equipment
- Site visits to determine lighting levels, switching arrangements, lighting fixture type and a count of all fixtures
- Data logging and analysis of time-of-use and power draw from circuits
- Identification of cost effective opportunities for improvement and the preparation of cost and savings estimates

The most cost effective solution was a combination of new and retrofit luminaires including energy efficient control gear and also energy efficient light reflectors. New energy efficient luminaires were used at those locations where the existing lighting fittings were deemed too old, or of non standard design, and retrofit kits were used to upgrade the recessed troffers identified earlier.

Benefits

Annual energy savings of 375,000 kWh.



IMVS is an environmentally sustainable site that Sustainable Focus is proud to showcase.