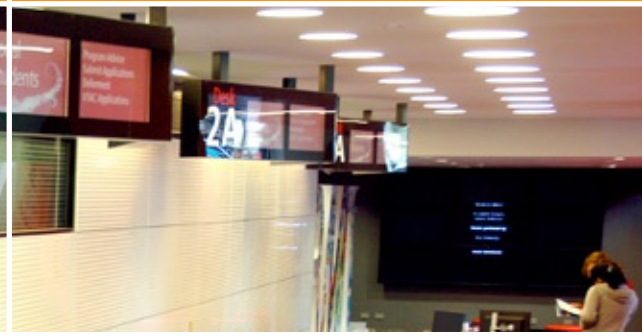


EDUCATION



AN EDUCATION IN ENERGY EFFICIENCY

RMIT University learns the benefits of reducing energy usage, simply by turning the lights off.



CASE STUDY



**RMIT
UNIVERSITY**

**CITY
CAMPUS**

VICTORIA

With the realisation that Global sustainability will be the driving force changing the way we work and live in the 21st century, RMIT University has shown continued dedication to the emerging field of sustainability, beginning with a look at the energy use within the university.

In a bid to reduce the environmental impact of their facilities, a major lighting upgrade was completed by Energy Conservation Systems (ECS), at numerous RMIT city buildings.

Previous to the upgrade, lighting throughout the university ran continuously 24 hours per day, every day of the year, as there was no means to switch it off.

ECS introduced efficient energy saving lighting controls throughout the university. Lighting Controls with both presences detection and voltage reduction were combined with highly efficient, dimmable, 35 watt T5 triphosphor luminaires.

The results of these upgrades brought about significant benefits that provided substantial improvements to aesthetic comfort levels for staff and students as well as reductions in overall energy consumption and greenhouse gas emissions.

KEY OUTCOMES

ENERGY SAVINGS (KWH)
115,790 KWh PER ANNUM

GREENHOUSE SAVINGS
2163 TONNES PER ANNUM

KEY SOLUTIONS

AN INTEGRATED ENERGY SOLUTION INCLUDING:

- UPGRADING LIGHT FIXTURES TO EFFICIENT LUMINAIRES.
- INTELLIGENT OCCUPANCY BASED LIGHTING CONTROL SYSTEM
 - OCCUPANCY BASED SWITCHING
 - DAYLIGHT LINKING
 - DIMMING & SCENE SETTING
 - VOLTAGE REDUCTION



Lessons & Outcomes

Significant energy savings have been realised throughout the university, simply by using lighting controls. Automatically switching the lights off to areas that does not require light or is unoccupied have resulted in a reduction of 36%.

Efficient Lighting Controls

ECS Stand-alone ultrasonic motion detectors 'Ultralite' as well as 'Lightsave' voltage reduction units were installed throughout the campus, while motion detectors were implemented in areas such as classrooms, and staff and student offices, where intermittent usage patterns were expected throughout the course of a normal operational day. As such, significant energy savings were realised via automatically switching the lighting off to these areas when not required or unoccupied.

In addition to these features, ECS engineered a solution that replaced the old inefficient 40 watt, T12 halophosphor surface mounted fittings with leading edge, highly efficient, dimmable, 35 watt T5 triphosphor fittings mounted end on end on aluminum extrusions suspended from the concrete waffle ceiling. Incorporated in these fittings were the ECS Managed Lighting System (MLS) detectors which automatically turned the lights on and off based on occupancy as well as regulating light levels in response to the natural daylight levels.

ECS' 'Lightsave' voltage reduction technology was installed on all the existing fluorescent luminaires within the library area that had old inefficient iron core ballasts within them.

These energy controllers result in energy savings of approximately 30% with only a 15% reduction in lighting levels, and are well suited to applications where it is impractical to switch lighting OFF to an area during operational hours and cost prohibitive to replace the luminaires.

The library was well suited to this technology, due to the long operating times, combined with the restricted ability to switch lighting OFF in this area throughout the day.

ECS' 'Lightsave' energy controller has reduced energy within the university by 30%. They are well suited to areas where it is impractical to switch lighting OFF

The 'Lightsave' energy controllers were also installed in common areas such as corridors and lobby areas, in which the lighting operational hours were expected to be much greater throughout the day. In this instance, energy savings can still be realised, even though the lighting is on for long periods.

Similarly to the library building, the car park of building 91 lent itself well to the application of ECS 'Lightsave' voltage reduction technology. Lighting throughout the car park area is predominantly standard fluorescent luminaires, which are required to be on for very long periods throughout the day.