



## ULTRA-VIOLET STERILISATION

### THE SHINING LIGHT FOR AIR-CONDITIONER COST SAVINGS

HVAC (heating, ventilation, air-conditioning) systems are ducted air-conditioners for large buildings such as office blocks, shopping centres and apartments.

**HVAC typically accounts for more than half of a building's electricity consumption, even when operating at peak efficiency.**

The warm, moist environment in a HVAC system accumulates dirt, mould and bacteria (biofilm) as part of normal operations. This reduces the efficiency of the system, resulting in even higher running costs, reduced equipment life and lower indoor air quality.

Ultra Violet C (UVC) sterilisation systems specifically designed and developed to operate in cold moving air restore and maintain HVAC performance by keeping the cooling coils, drain pans and plenum walls perpetually clean.

This case study summaries the outcomes achieved through the installation of Ultra Violet C (UVC) sterilisation systems at Cairns Regional Council's Spence Street Office.

For more information contact Council's sustainability team on 07 4044 3542 or [sustainability@cairns.qld.gov.au](mailto:sustainability@cairns.qld.gov.au)



One of the UVC sterilisation systems installed at Council's head office



In 2013, Cairns Regional Council installed Ultra-Violet C (UVC) sterilisation systems in the air-conditioning system of the Spence Street office to:

**Reduce running costs | Extend equipment life | Improve indoor air-quality**

Eighteen air-handling units were upgraded with the system engineered high output UVC sterilisation technology to restore and maintain system efficiency by keep the cooling coils, drain pans and plenum walls perpetually clean.

**Project cost:** \$53,000

**HVAC energy savings:** approx. 20%

**Return on investment:** <12 months

**Supply chilled water temperature:** increased from 6.0<sup>o</sup> to 7.0<sup>o</sup> (i.e. optimising achieved additional savings above the 20%)

**Indoor air quality:** Microbial pollutants were sampled before and after the UVC systems were installed, with results showing a significant reduction in microbial contamination of HVAC surfaces, the supply air and occupied spaces.